FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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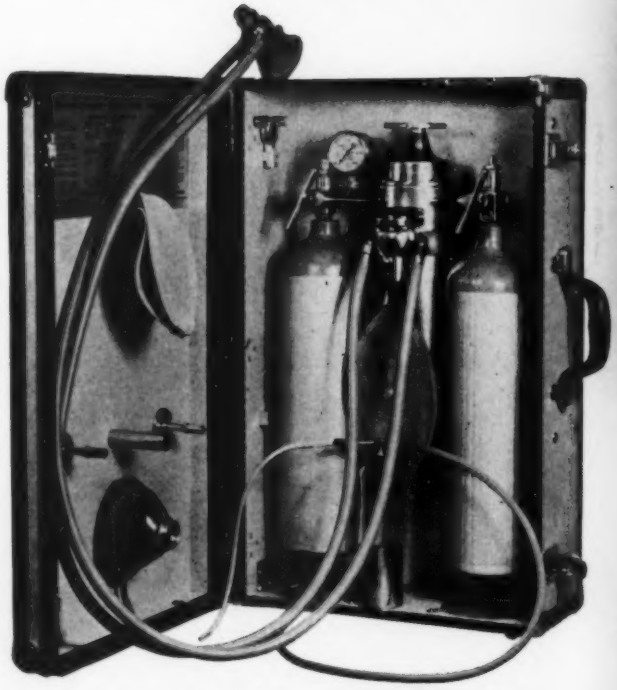

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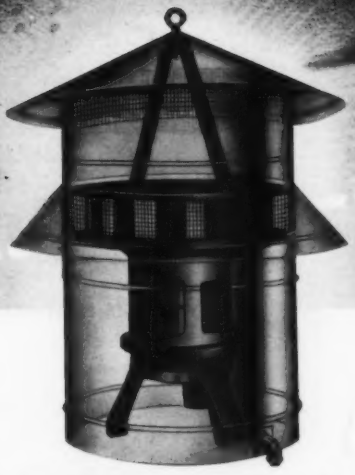

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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor
N. N. WOLPERT
Assistant Editor

The Need is Great

WHAT we once considered mere junk has now reached the status of "sinews of war".

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- FIRE ENGINEERING is proud of its opportunity for serving as a mouthpiece for so important a group in the war effort as is represented by the country's fire service.
- Incidentally, we are told that our last issue, July, did a particularly fine job in this respect, and we are still receiving congratulations upon the strong editorial material published, as well as the valuable and timely volume of advertising it carried.

The Publishers

FIRE ENGINEERING

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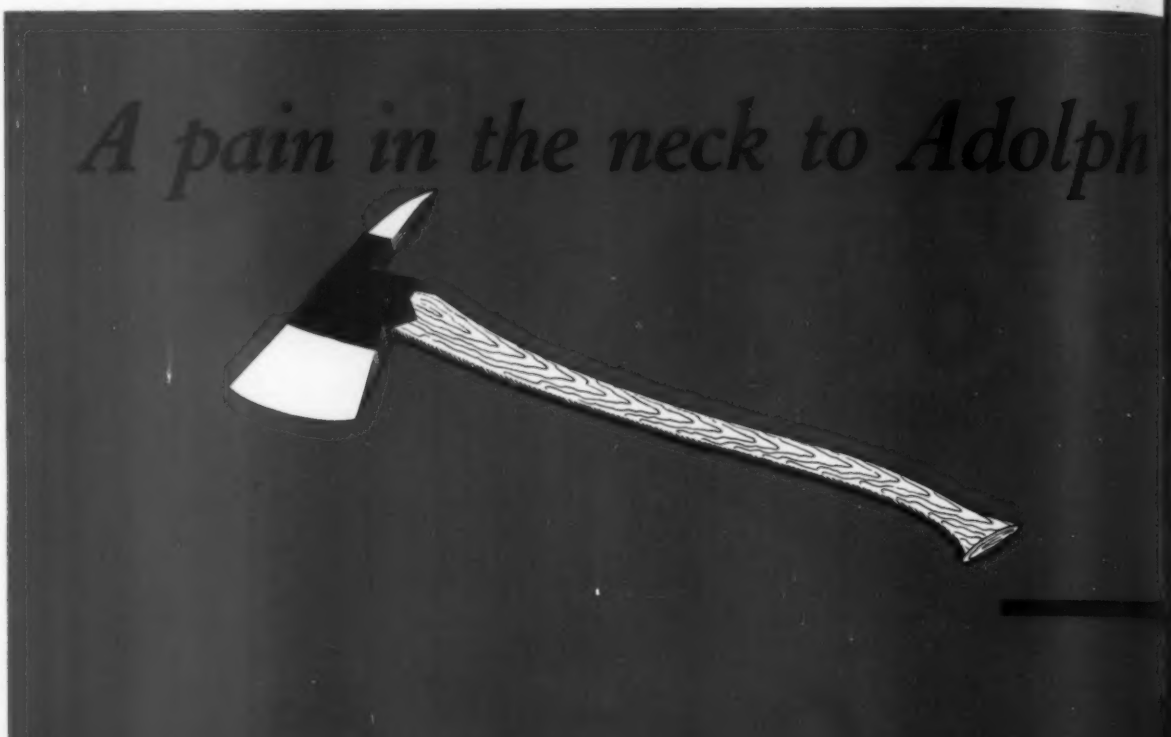

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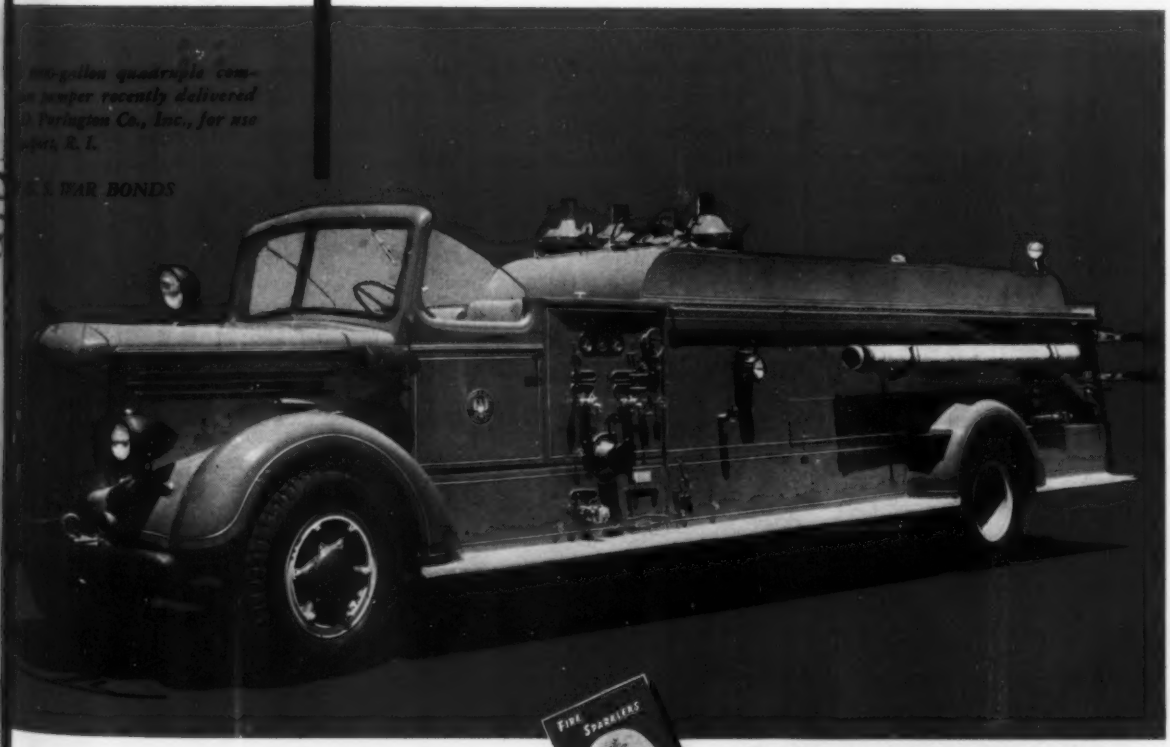

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AUGUST, 1942

FIRE ENGINEERING

VOL. 95. NO. 8

With the Editor

Are Not Alarm Systems Vital?

A section of underground fire alarm cable at Akron, Ohio, became water - logged and the city asked the Bureau of Governmental Requirements at Washington for priority to purchase a stretch of 430 feet for replacement. The request was denied with the sterotyped excuse so familiar today to fire chiefs from coast to coast, that "the rapidly increasing demands for our army and navy and the scarcity of vitally needed materials such as aluminum, brass, copper, rubber and steel compel this action now."

The cable carries power to 100 fire alarm and eight police call boxes that provide protection for the estimated one-fourth of the city's population that resides in North Akron.

The cable also provides independent communications connection between the civilian defense control center downtown and sub-centers in North Akron and Cuyahoga Falls—connections established by civilian defense order for use in case the telephone system should be disabled in an emergency.

While the civilian defense function of the fire alarm system may never be employed, the need for the system in connection with everyday fire fighting is vital. Should a single circuit fail to function in an emergency, the delay in response of fire apparatus might result in the destruction of important defense industries.

A fire department without a dependable method of receiving alarms is dangerously handicapped. It's too late for efficient work after the sky is lit up!

It seems to us a little education for government bureaus on the working of the fire service would be effort well spent.

Industrial Chiefs Must Be Qualified.

Because of great concentration of values, multiplicity of fire hazards and possibility of large fires, the Fire Chief of the defense industry must have not only wide experience in fire fighting and fire prevention, but must as well have inherent qualifications to discharge the great responsibilities of the job.

No man, just because he has been a member of a paid fire department for a decade or two, can claim all the qualifications for such a position. It requires a capable fire officer to meet the specifications.

There are many able fire fighters available today for such duty. It's worth the time and effort of war industries to seek them out.

Fred Sheppard

MAIN LIBRARY FE

Civilians Provide Fireboat Fleet

By WINSTON PHELPS

A MOSQUITO fleet of civilian-operated power boats, to be organized as an auxiliary fireboat and rescue patrol in Narragansett Bay, south of Providence, is being organized in Rhode Island as an arm of the civilian defense establishment. It is the first organization of its kind in New England.

One of the small craft already has been fitted out for firefighting and rescue missions in the Bay and has passed its trial tests successfully. Ultimately the plan calls for ten or more of the 30 to 40-foot power boats, each to carry firefighting apparatus, first aid equipment and radio sets for communication with the land. They will be manned by crews of trained firemen and first aid workers responsible to the Rhode Island Council of Defense.

According to present plans, the only expense to be borne by the State will be for equipment and possibly for insurance to cover damage incurred during emergencies. In each case the civilian owners of the small craft have offered their services and the use of their boats for the duration of the war.

The idea for the patrol was conceived long before the attack on Pearl Harbor by Paule Loring, of Wickford, R. I. As spokesman for a group of small boat owners, fishermen and amateur yachtsmen, he offered to organize the auxiliary fleet under supervision of the Council of Defense. The offer was accepted.

No Protection Against Waterfront Fires

Though it is the smallest of the 48 states, Rhode Island has 400 miles of shoreline and much of that shore is dotted with probable military objectives—shipyards, oil tanks, refineries and factories engaged in war work. Yet in all that length of shoreline there was not a single fireboat comparable to the huge craft maintained in New York City. The only protection against waterfront fires was that provided by the various fire companies operating on shore.

Mr. Loring proposed that the civilian fleet be organized for emergency duty, each of the craft equipped with pumper and hose. The boats would be based at various points on the Bay with crews ready to go out at any time. Within an hour, Mr. Loring pointed out, several of the craft could be concentrated at any point in the Bay from Newport to Providence. U. S. Navy and Coast Guard authorities indorsed the project and Mr. Loring's boat, the Nehi IV, was accepted as a guinea pig for the experiment.

Permission was obtained to paint the boat in a distinctive gray and to identify it on the bow with a large insignia "CD-1." The CD is for civilian defense. The numeral 1 denotes the first boat of the fleet.

Fire Fighting Equipment Installed

After a long series of delays, the necessary firefighting equipment was obtained and installed and the first of the CD boats was put through its tests. Witnesses at the demonstration included Gov. J. Howard McGrath, the chiefs of several Rhode Island fire departments, officials of the State Council of Defense and representatives from the Quonset Point Naval Air Station.

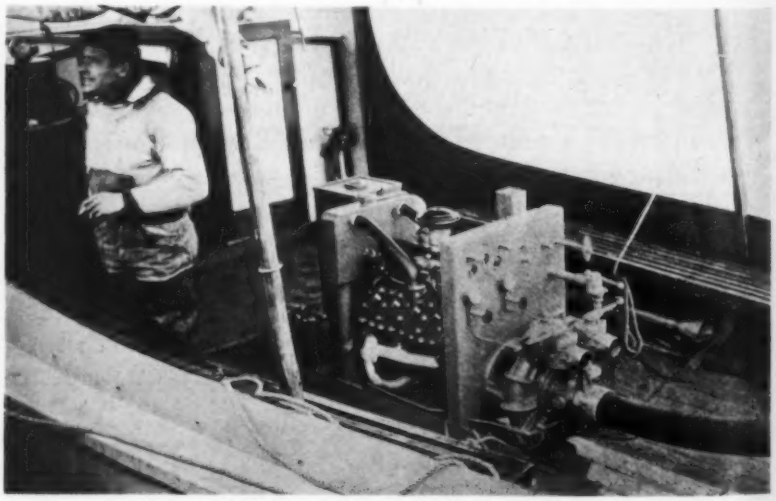
Fears that boats so small—CD-1 is a 36-footer—would be of little practical use as firefighters proved groundless. The little craft threw a stream of water from a two-inch nozzle 100 feet in the air at a rate of 841 gallons a minute. In spite of the great pressure at the nozzle tip, Mr. Loring had no difficulty controlling the boat's movements.

Battalion Chief Harry McElroy of the Providence Fire Department, who also is Fire Co-ordinator with the State Council of Defense, admitted the demonstration removed all doubts from his mind. "It works a great deal better than we anticipated," he said, and it seems to be just the thing we have been looking for to provide fire protection in Narragansett Bay."

Progress in formation of the fleet now awaits action by the State Council of Defense, the Governor and the legislature in ironing out details, placing authority and determining how the costs are to be borne.

Crew on 24 Hour Call

Each CD boat is to have a skipper, an engineer and two trained firemen as a minimum crew. The firemen would be appointed by the fire department in the home port. In most cases the boat owner will be the skipper and he will appoint his own engineer and a substitute crew. Like the air raid wardens and other civilian defense workers, the crews of the CD boats will be on 24-hour call.



Fire Pump Unit Installed in Cockpit of CD-1

During emergencies the CD boats will be permitted to move freely in the Bay and will not be subject to the wartime restrictions imposed on other private owners of small boats. At other times the owners may use the CD boats for private purposes, though they are to be required to inform the State Council whenever they propose to be away from their appointed home ports. In this way the warning center of the State Council intends to keep tabs on the whereabouts of the craft at all times.

First Aid Equipment Carried

The rescue functions of the CD boats are being worked out by Roger Wheeler, chief of the Rhode Island Life Saving Division with the State Defense Council. Each boat will carry bandages, splints, salve for burns and other first aid equipment, all housed in a first aid kit to be installed in the boat cabins. At least two members of the crew on each boat will be required to take the same Red Cross course of instruction in first aid that is now provided for state air raid wardens.

A third function of the mosquito fleet, yet to be worked out in detail, would be to assist in evacuations. Certain areas in Rhode Island which are near military objectives have been noted as evacuation zones. Preparations have been made to move all children from those zones in time of emergency. The plans now call for fleets of private automobiles, trucks and busses to move the evacuees from the endangered areas to the safer receiving zones.

To Assist in Evacuations

State Council officials realize, however, that difficulties might be encountered if roads or bridges were damaged or destroyed. In such a contingency, the fleet of CD boats might prove of great value in moving evacuees from Newport, for example, across Narragansett Bay to South Kingstown. The boats also could be called upon to rescue civilians from the various islands in the Bay and take them to the mainland, should that be necessary.

CD-1, flagship of the fleet-to-be, in nautical terms is a Nova Scotia lobsterman converted into a sport fisherman—and now converted again into a firefighter and rescue boat. It is 36 feet overall, has a beam of 10½ feet and draws three feet of water. The shallow draft is advantageous because it will permit the craft to move into shallow inlets or close in to shore, places which couldn't be reached by a large fireboat.

A six-cylinder Chrysler Ace engine with a reduction gear moves the CD-1 along at nine and a half knots. Barring bad weather, the boat can reach any point in Narragansett Bay in two hours or less from the home port at Wickford. The Bay is 28 miles long. Under the plan, CD-2, CD-3 and the other members of the fleet would be stationed at other ports along the east and west sides of the Bay such as Bristol, Warren, East Greenwich, East Providence or Pawtucket.

Mr. Loring went to considerable personal expense to make over his boat for the civilian defense job. The boat was repainted. The short mast was removed. Two of the four bunks will be taken out to make room for the first aid kit and the radio apparatus. No changes were required in the cockpit which was large enough to accommodate the fire pumper with plenty of room to spare. As an additional precaution, the hull was sheathed at the waterline with metal as a protection from winter ice.

All the other boats offered for incorporation in the fleet are roughly comparable to Mr. Loring's in size.

Pump Equipment

A centrifugal pump connected directly to a Ford V-8 90-horsepower engine is the basis of the firefighting apparatus. The unit, made by the Maxim Motor Company of Middleboro, Mass., weighs 850 pounds and costs approximately $1,000 with the necessary hose and fittings. A 4-inch intake hose is slung over the side of the boat and a standard 2½-inch hose is laid forward to connect with the swivel nozzle mounted near the bow.

Though the pumper unit is rated at 500-gallons-a-minute capacity, it exceeded this output by a wide margin in the trial tests. With a two-inch nozzle, a stream of water was discharged at 841 gallons a minute with 50 pounds pressure at the nozzle tip. A 1½-inch nozzle tip gave 633 gallons a minute with a pressure of 90 pounds at the nozzle tip. During these tests the pumper engine turned at from 2,300 to 2,800 revolutions per minute.

Narragansett Bay Vital to Defense

Rhode Island was caught wholly unprepared to deal adequately with trouble on its long shoreline when the cry was raised last December for air raid protection. In the Narragantsett Bay area are many vital targets—the naval base at Newport and the Naval Air Station at Quonset Point, to name only two of them—yet there was not a single first-class fireboat available.

Providence is now negotiating for a Federal grant and a priority rating, hoping to obtain a new $100,000 fireboat. Because of the great activity at the nation's shipyards, however, the prospects are slim that the boat can be obtained before 1943 at the earliest. Meanwhile Narragansett Bay looks to the mosquito fleet of CD boats for its protection. In any case the fleet promises to play an important role in the State's program of civilian defense.

Frank Charlesworth, a veteran Providence fireman, former State Fire Marshal and now Chief of the fire department at the Quonset Point Naval Air Station, expressed the opinion after seeing the demonstration that the CD boats would prove of great value in peacetime as well as in wartime.

"I don't know why someone didn't think of it sooner," he said.

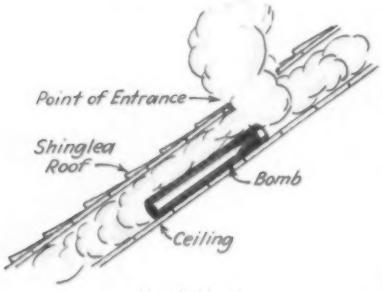
CD-1 Undergoes Test for Pump Discharge

Practical Training for Auxiliary Firemen

By FRED SHEPPERD
Editor, FIRE ENGINEERING

IN this article the fighting of fires caused by incendiary bombs is discused. Attic, partition, closet, cockloft and other common types of fires are included.

Q. If an incendiary bomb comes to rest on a combustible roof of a building, what is the procedure in extinguishing it?



Sketch No. 1

A. The procedure of extinguishing a fire caused by an incendiary bomb falling on a roof is to spray the bomb and surrounding combustible material so that fire will not extend and the bomb will be permitted to burn itself out. A spray for expediting the burning of the bomb and wetting surrounding combutsible material is effective in this operation. A straight stream may be used for reaching a fire burning in combustible roofing. The chief precaution to take is to make sure that no fire has passed through the roof and is burning in the attic or other concealed space. Inspection should be made of the building just under the roof to make sure of this point.

Q. If an incendiary bomb lands in the space between the roof and finished ceiling of a peaked roof, how should the resulting fire be handled?

A. Sketch No. 1 shows the situation encountered. Here the danger of fire extending up through the space to the peak of the roof, and down the other side of the building, is very real. Fire may also extend laterally past the roof beams if the roofing is not tight. Locate the position of the bomb, if possible, from the inside of the building, and rip down ceiling so that bomb will fall to a point where it can be handled. Use spray or stream of water on burning materials between the roof and ceiling, and make sure that all fire therein is out. Handle the burning bomb as described in previous instaliments.

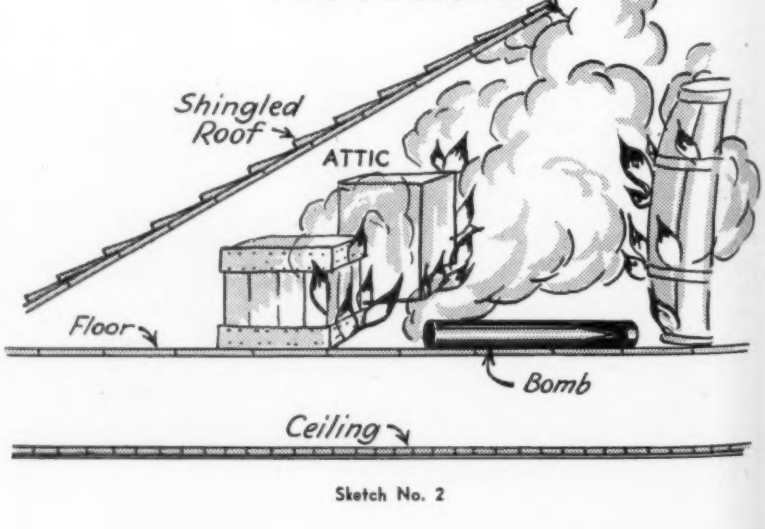
It may be possible to reach the roof quickly, and operate on the fire from this point. In this case the roof would have to be opened up so that the burning bomb as well as fire in combustible material adjacent to the bomb may be brought under control.

Q. An incendiary bomb passes through the roof of a building and lands on a finished attic floor. Outline the method of handling the fire caused by the bomb.

A. Sketch No. 2 shows the layout involved. Use the water spray on bomb and on surrounding combustible material. Solid stream may be employed for extinguishing the fire in burning combustible material around bomb, but it is inadvisable to use a solid stream on the bomb due to the danger of spreading the fire by the violent reaction of water on burning magnesium. After the fire on the floor, and in adjoining materials, has been extinguished, make sure that the fire has not yet penetrated through the floor to the space between floor and ceiling below.

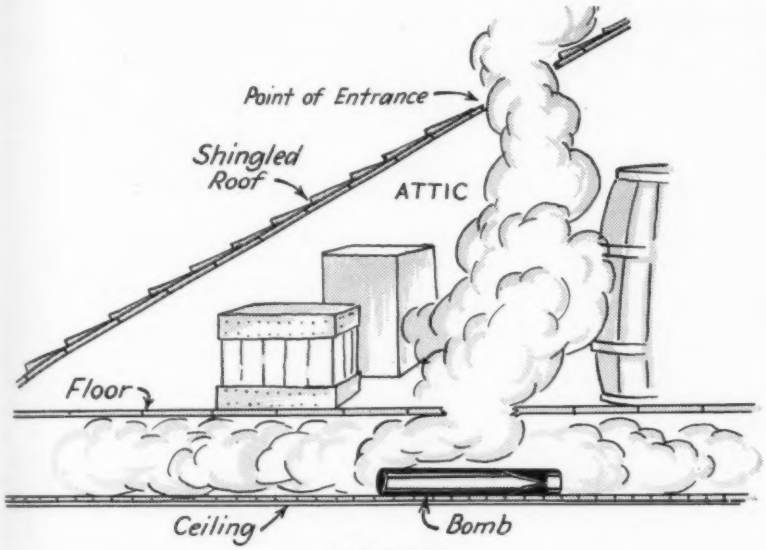
Q. Should this bomb pass through the floor also and come to rest on the ceiling below, how would the resulting fire be handled?

A. Sketch No. 3 shows the situation encountered. It is quicker to pull portion of the ceiling than to open the floor, so that it would be best to go to the floor below and open up the ceiling in the neighborhood of the bomb, as the bomb may not be readily reached by a spray of water from the attic. If this latter is possible, fine spray should be used to prevent molten magnesium from being thrown through the space between floor and ceiling, and thus spreading the fire over a large area. There



Sketch No. 2

will probably be better chance of the fire being controlled if the bomb is reached through the ceiling from below and permitted to drop to the floor below. In this case the bomb can be disposed of in the usual manner, and the extinguishing of the fire in the space between the ceiling and the floor above can be brought about.



Sketch No. 3

Q. Delay in discovering a bomb which has fallen through an attic has resulted in the attic being involved by fire. What procedure would be followed in controlling this fire?

A. Small streams are effective for such fires, if the fire has not involved too large an area. Such fires can usually be reached with greater speed by stretching a line of hose up the stairwell to the top floor and getting to the attic through a trap door, by attic stairway or ladder, or by opening bulkhead. Fire departments carrying twelve foot extension ladders find them very effective for reaching attic fires. The dense smoke usually encountered at such fires may make it difficult to determine when the fire is completely extinguished. But any rekindling of the fire will be readily detectable so that while it takes a little time to have the attic cleared out of smoke to make sure the fire is completely out, there is little danger of its re-igniting unnoticed once the body of the fire has been blacked. If the attic is provided with windows, these windows can be opened from the outside if they cannot be reached from the inside to provide the necessary ventilation.

Where the attic is completely ablaze, then it is time to use larger streams, such as one-inch or one and one-eighth inch. Such operations are much more effective if performed from the outside, due to the presence of intense heat and smoke within. A ladder is usually raised to the roof, a section of the roofing pulled off, and a stream put in operation from the outside. If windows are available, they, of course, provide most effective means of reaching the blaze. Just as soon as the fire has been brought under control, water should be shut off to avoid unnecessary water damage. Thorough inspection should be made to make sure that fire has not extended to concealed spaces, or that it continues to burn behind plaster, under flooring, etc.

Q. An incendiary bomb has landed in an attic storeroom and involved materials stored there. What is the procedure in extinguishing this fire?

A. Due to the accumulation of combustible materials in the average attic storeroom, the fire would probably be beyond the capabilities of any first aid appliance. Stretch in a booster line or a 2½-inch line with 1-inch nozzle and operate on fire. Due to the smoke in the space, it will probably not be possible to enter until the fire has been brought under control. Ventilate the space, if necessary, by opening up with axe, removing portions of partitions in this manner. After the fire has been extinguished, make sure that none remains burning in any of the materials stored in the storeroom, nor in partitions, under flooring, or above ceiling in concealed spaces.

Q. Fire is started in a cockloft of a flat roof building by an incendiary bomb which has landed in this space. The extent of the fire is not known, but smoke is seen coming from several points

Reaching the Attic Fire from the Inside and Outside

along the cornice. How would this fire be handled?

A. Stretch a booster line by stairway to the top floor of the building, and open up the ceiling. Using a bent nozzle, operate stream into cockloft space. If fire appears to be spreading, and if cockloft extends over several buildings, open up ceilings under cockloft in adjoining buildings on each side of the fire building. Open up roof over fire, either by removing scuttles or other coverings, or by cutting roof. If necessary, use additional lines from buildings on either side, working up through the ceiling, to hold the fire and extinguish it.

Q. Why are cockloft fires troublesome?

A. Cockloft fires are troublesome because they spread rapidly and are hard to reach. Where cockloft covers several buildings in a row, the dividing walls between buildings may not reach up to the roof so that fire can travel from one building to another through this blank space.

Q. Fire has started in a clothes closet. How would it be handled when the clothes closet is quite fully involved?

A. First aid appliances may control this fire, but a booster line would be more dependable. Stretch line up to clothes closet, open door and wet down fire. After fire has been brought under control, remove the clothes and make careful inspection of closet to make sure fire has not traveled beyond, nor reached concealed spaces. Make sure all fire in clothing has been extinguished.

Q. How should a fire involving upholstered furniture, bedding, etc., be extinguished?

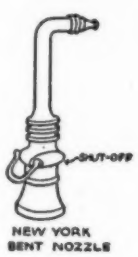
A. Use first aid fire appliances such as pump tanks, knapsack pump, soda and acid extinguishers, etc., for bringing the fire under control. Then make sure that all fire is out by opening up the upholstery.

Q. If an incendiary bomb has fallen down a dumbwaiter shaft, and is burning at the bottom, what would be the procedure in extinguishing the fire?

A. If the bottom of the shaft is of concrete or of non-combustible material, the problem will resolve itself down to keeping the fire from spreading. Use of the spray will accomplish this very effectively. If combustible material is located at the bottom of the shaft, and if fire is likely to travel up the shaft, then the lower part of the shaft should be wetted down by spray or solid stream, or the spray alone should be used on the bomb. After the fire has been extinguished, make an inspection of several floors above to make sure fire has not passed upward through the shaft.

Q. Fire has involved a single small room in a dwelling. How would fire be handled?

A. A booster line, employing a ½-inch nozzle, would probably be sufficient to handle this fire. If there is danger of the fire having extended, than a 1-inch nozzle on 2½-inch line would be desirable. In either case, the stream should be directed at the base of the fire, that is, the materials burning. After fire has been extinguished, make careful inspection to make sure that no fire burns within the partitions or concealed spaces. Also, check over materials which have been burned to make sure



Sketch No. 4

the fire is completely out. In operating on fires in rooms, it is desirable to provide ventilation by opening windows and doors, but only after the hose line is in position for operation.

Q. What is the best method of extinguishing fire burning within partitions?

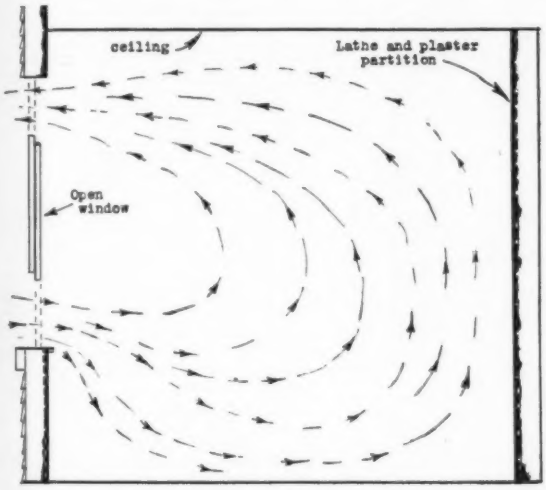
A. First, locate the fire. One of the simplest ways of locating a fire within a partition is to feel along the wall with the hand. The part behind which the fire is burning can easily be located by the heat. If the fire has been burning for some time, the wallpaper may be discolored, or paint blistered. Either of the above indications will serve to locate the fire. When it is located, and a stream of water is ready for use, partition should be opened near the baseboard with an axe, or other tool, and the stream put into play. For this work a very small stream will be satisfactory, and much more so if a bent tip (New York bent nozzle) is available. Fire burns upward, and by standing at the bottom of the partition it is a very quick operation to cover the entire fire by directing the stream upward. This applies where the fire is burning in one part of the partition only, between the studding. On the other hand, if the fire has risen in the partition at several points, then the partition will have to be opened up as required at the different points in order to reach all of the fire. A stream directed vertically in a partition strikes the partition and breaks up at points above, and comes back in the form of a spray, which proves effective in extinguishing the fire. Carbon dioxide extinguishers have

The Attic Fire Spreads Rapidly

proven very effective for extinguishing small partition fires.

Q. What is meant by ventilation at a fire, and what is its purpose?

A. By ventilation is meant opening of doors, windows, roof scuttles, and other openings to permit heat and smoke to leave building and thus make effective operation on the fire by the fire fighters possible.



Sketch No. 5

Q. How would a room be ventilated at a fire?

A. By pulling the windows down from the top and up from the bottom. Fresh air flows in at the bottom and the smoke and heated air pass out at the top. Sketch No. 5 shows the theory of window ventilation.

If ventilating a whole floor, the windows are usually pulled down at the top only, for cross draft will carry the smoke and heat out.

Q. What is meant by overhauling at a fire?

A. By overhauling is meant the operation of checking over the fire to make sure that all fire has been extinguished, inspecting concealed spaces and points in which fire may be burning, and draining off excess water after a fire. Briefly, overhauling is the operation of making sure that all fire is out.

Q. In operating on any fire, what is the prime requisite of good fighting?

A. Directing the extinguishing agent at the base of the fire, and not at the smoke.

Q. What precautions should be taken when objects are being thrown from windows after a fire?

A. Warn those below on the street so that injury may not result.

Q. You are on the end of a line of hose operating in a building, and, due to emergency, must find your way back to the window again. Smoke is so dense that you cannot see your way. How would you accomplish this?

A. Follow the hose line back to the nozzle.

Should you not be on a line, but must find your way out, feel for cracks in the floor and follow same to the wall and around, until you reach your window or door. Unless such precise method is followed, there is danger of men traveling around in a circle, particularly in a large room which is filled with dense smoke.

Q. When entering a smoke-filled building with a line of hose, equipped with a playpipe, how should the playpipe be held?

A. As a matter of protection, the playpipe handle should be grasped with both thumbs pointing to the rear, that is, toward the line of hose. Then in case you go through the floor, the pipe will not be torn from your grasp, and you will have the means of either pulling yourself up or being pulled up by companions; thus you may save yourself a bad fall, with possible injuries.

Q. In directing a stream of water into a room filled with boxes, cases, and other materials, how should a stream be directed?

A. Direct the stream at the ceiling or wall. This will cause the water to spray and cascade down between the boxes, etc.

Large Canadian Shipyard Completely Destroyed by Fire

The most disastrous fire that the town of Midland, Ontario, located on the famous Georgian Bay, has ever experienced occurred on July 15 at 6:30 p. m. It completely destroyed the Midland Boat Works, two navy vessels, the Canadian National Railway station, an ice house, a coal shed, eight houses and several other small buildings. Many roofs of homes in the vicinity were damaged as well.

The fire was discovered in the boiler room of the Midland Boat Works, a plant doing 100 percent war work. It appears to have been caused by the shafting overheating and igniting the beams.

The water pressure in the town had been low for the past few days because of a break in the main, but the pumpers drew water from Georgian Bay.

When the fire department arrived, they found the plant a mass of flames and the heat and smoke terrific. As the wind was in a favorable direction, a large plant of another shipyard and a foundry were saved. The fire department could not save the wooden plant and a call was put in to Barrie and Penetang for assistance. These cities are thirty miles away.

The sparks carried by the wind set fire to the Canadian National Railway station, and men on the roof tried to put out the fire. Because of the intense heat and smoke, it was impossible to save it. The fire for a time appeared to be spreading to the railway freight sheds, but by hard work the men managed to save them.

The fire then spread to the ice house and coal sheds, and they were destroyed. It jumped to five houses and left them in ruins. Three more houses about half a mile away also went up in flames.

The fire was finally brought under control at 10 p. m., after it had threatened a large coal pile of about 200,000 tons.

A great number of the town people volunteered in the fire fighting and they were a great help in the stopping of the blaze.

JOHN KARL LEE.

Forest Fire Fighters Service Established

The Office of Civilian Defense has announced the establishment of the Forest Fire Fighters Service.

The purpose of this service is to safeguard forest lands and other timber facilities and resources, to prevent and control fires which might endanger such facilities and resources and to minimize the effects of any such fires. It will cooperate with the forest fire protection agencies of the Departments of Interior and Agriculture, with State Forestry officials and private forest fire protective organizations.

The Forest Fire Fighters Service will operate under the supervision of the Facility Security Branch of the Office of Civilian Defense, and will be directed by the Timber and Related Facilities Committee which consists of appropriate officials in the Departments of Interior and Agriculture, appointed by and responsible to the Director of Civilian Defense.

A National Coordinator will be appointed to head up this service. He in turn will appoint state coordinators from federal, state or private forest fire protection agencies. Local coordinators will be appointed by the state coordinators and they in turn will appoint from the enrolled membership of the Forest Fire Fighters Service, within each locality, a squad leader who will have under his control a working unit of from eight to ten forest fire fighters.

Deferment of Firemen

Experiences of the Majority of Departments in Requesting Deferment for Skilled Men Found to be Unsatisfactory

IN the May issue of FIRE ENGINEERING were given the experiences of a group of Fire Chiefs in securing draft deferment for qualified men in their departments. In the June and July issues were included the reports of fire departments which were not so successful before their draft boards. Additional reviews of this latter group follow.

Sharon, Penna.
W. LeRoy Hall, Chief

We have not as yet had any men called. In the event that we do have any called, I will appeal to the local draft board for deferment, as we are now having difficulties filling vacancies with men between the ages of twenty-one and thirty-five as governed by the civil service in the State of Pennsylvania.

Galveston, Tex.
Mayo Paretti, Secretary

We have never requested deferment of any fireman called in the draft. None have been called as yet, but we expect several in the future.

Kingston, N. Y.
Joseph L. Murphy, Chief

At the first registration, the local draft board did place the firemen in a deferred class, but recently I have been informed by the draft board that there is no class deferment for firemen. To date no firemen have been called into service.

Sioux City, Ia.
Charles B. Kuhl, Chief

We have not had any men drafted. Two have enlisted. Three of our men are in Class 1-A. These are single men. All married men with families were put in 3-A.

Santa Ana, Calif.
John Luxembourger, Chief

Two of our men were called in the draft. One did not ask for deferment, and the other we felt should not be deferred.

I would ask for deferments for some of my men who were called; for others I would not.

Bangor, Me.
H. P. Constantine, Chief

It happens that none of the members of the Bangor Fire Department have as yet been called in the draft. I expect a few of our younger, unmarried, members to be called in the near future. I really do not know at this time what procedure I will follow. We have about twenty names of young men on the civil service eligible list for the fire department. I would like to know how the draft is going to affect these young men.

Lubbock, Tex.
W. E. Twitty, Chief

We have only lost one man to the Army, and he volunteered. I don't know what luck we'll have hereafter.

Teaneck, N. J.
F. A. Murray

We have not asked for deferment of the eight men called in the draft. We will have to do the best we can with inexperienced replacements, giving them a rigid curriculum of training, and hope to qualify them in the shortest time possible.

Laredo, Tex.
George E. Renken, Chief

Five were called before the war and deferred by my personally applying to the local board. After war was declared one man was called and is now serving. We will not ask deferment during the duration.

Waltham, Mass.
Bertram A. Neal, Chief

To date no member of our uniformed force has been inducted into the service. Those who may have been deferred owe it to other reasons than being a permanent fireman.

Kalamazoo, Mich.
J. Frank Van Atta, Chief

We have not asked for deferment of the three members called in the draft.

Wyandotte, Mich.
Gustav Anselm, Chief

One man has been called and eight men are subject to be called in the draft. No action has been taken by the Fire Department to secure deferment.

Huntington, W. Va.
Brooks McClure, Chief

To date we have had only one man from our department called for military service. He was a member of the Naval Reserve. We did not ask deferment for him.

Denver, Colo.
John F. Healy, Chief

We have not sought deferment for any of the men called for the armed forces. Ten have already been called and five have enlisted.

Duluth, Minn.
C. D. Goldsmith, Chief

The boys of our department did not request deferment. They considered it their duty to respond to a more important alarm.

Plainfield, N. J.
W. J Dunn, Chief

None of our men have been called so far, but we expect a few to be called soon. The city has not asked deferment for city employees as yet.

Middletown, Conn.
M. W. Lawton, Chief

We have but ten men registered so far for the draft. None have been called for examination.

Lorain, Ohio
David E. Hatt, Chief

We have not asked for deferment of firemen called in the draft, and will take no action, at least for the present.

Hoboken, N. J.
John J. Gilday, Chief

None of our men have been drafted to date. Twenty-five of our men are in the draft age.

Poughkeepsie, N. Y.
Chris W. Noll, Chief

None of our men have been called as yet. We have about six on the draft list.

Somerville, Mass.
J. C. McNally, Chief

Five members have been drafted out of 164. We did not apply for a deferment.

Cleveland Heights, Ohio
O. F. Romann, Chief

As yet I have not been called upon to secure any deferment, as none of my men are listed in class 1-A at present.

Worcester, Mass.
Carl J. Kiessling, Chief

Fourteen men have been called and none deferred. We did not submit an appeal.

Pawtucket, R. I.
N. Taupier, Chief

We have not asked for deferment of firemen. One man has been called inducted into the Army.

Auburn, N. Y.
F. J. Washburn, Chief

We have made no drive to get deferment for the firemen called in the draft. One of our men of draft age has been deferred because of dependents, two have enlisted and one was drafted.

(Continued on page 536)

PITTSBURGH INDUSTRIAL PLANT PREPARED FOR AERIAL ATTACK

Well Organized and Equipped Fire Forces Ready for Action

VOLUNTEER air raid vigilantes at the Westinghouse Electric and Manufacturing Company's East Pittsburgh works snuffed out incendiary bombs, bandaged imaginary wounds and demonstrated how fellow workers in this war production plant will be protected if enemy planes pierce their way to Pittsburgh. The same protection system is in effect at Westinghouse's 25 manufacturing and 35 repair plants throughout the nation.

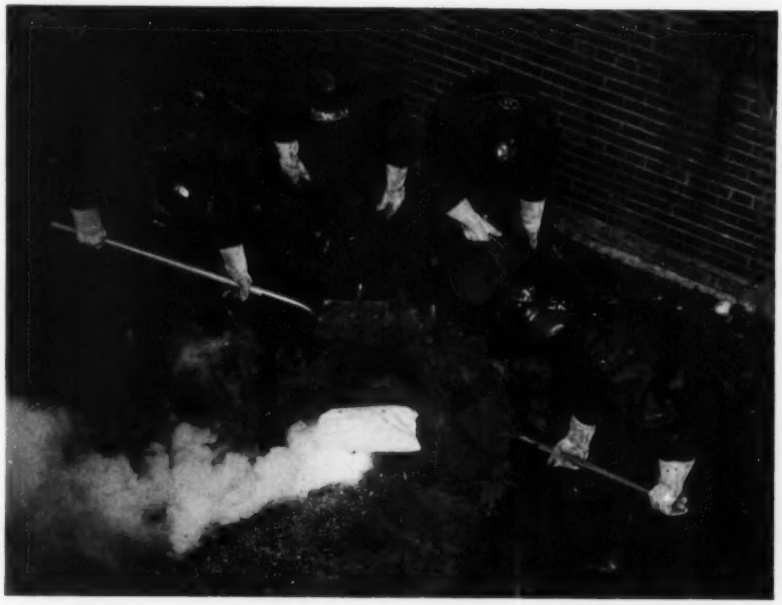
Trained to guard lives, put out fires started by bombs or saboteurs, and restore bombed production equipment, the Westinghouse "minute men" went through their defense maneuvers before representatives of the nation's fighting forces and the Office of Civilian Defense.

The ringing of a telephone in a sandbagged control center set in motion the alarm system announcing that a simulated air raid was in progress at the 77-acre plant grounds. Whistles sounded their "alert" and "danger" calls, which in an emergency would send 14 plane and fire observers, 174 fire watchers and 188 plant wardens to their stations.

Centralized Control

Heart of the Westinghouse plant protection communications system is the control center. Manned 24 hours a day, this alarm headquarters is equipped with three "outside" telephones and two radios continuously tuned to pick up police short wave messages and regular broadcast warnings of approaching enemy bombers. In case of air raids, messengers will stand ready to relay the orders on foot if telephone communications are bombed out of action.

On call for emergency duty are 450 men and women trained and equipped to administer first aid, carry victims on stretchers, operate emergency hospitals on the plant grounds and put on gas masks to remove workmen from areas struck by gas bombs. The rescue and demolition squad is prepared to extricate persons trapped in debris and remove such dangers as tottering walls and fallen power wires.



Smothering an Incendiary Bomb

Volunteer firemen at the Westinghouse East Pittsburgh works practice extinguishing an incendiary bomb with sand. Once a week the 225 volunteers hold drills, learning the exact moves they'd make if enemy bombers came—battling fire bombs with sand and water spray, unreeling hose and putting out various types of blazes started to give them practice.

Bomb Fighters

Using a fire hose equipped with a fog nozzle, volunteer fire fighters at the Westinghouse East Pittsburgh works direct a fine spray of water at a burning incendiary bomb to hasten its burning out during a practice drill. Some 225 employe firemen go through maneuvers of this type once a week to prepare for possible air raids.

Ready to Combat Fires

Fire fighters—225 men trained to battle incendiary bombs, oil fires, and all types of blazes—have been equipped, drilled and assigned to specific jobs as regular members of the Westinghouse volunteer fire department. In drills once a week these men unreel fire hose mounted on walls and posts and put out fires started in isolated places to give them practice. Their equipment includes fog nozzles that throw out a fine spray of water to speed the burning-out of incendiary bombs.

In addition to the regular firemen, 400 more employes volunteered to serve as auxiliary firemen and are receiving special training. And for further protection, 37 tons of sand, buckets, long handled shovels and 20-pound sand bags have been distributed to 300 strategic locations throughout the plant.

The system under which firemen are summoned to blazes provides constant fire protection in all sections of the plant. A central station fire brigade answers all calls, working with the firemen in the affected zone. In addition, other bigades stand by at designated posts to extinguish flames that might be started simultaneously by saboteurs.

Protection Against Sabotage

On guard against saboteurs and other intruders at the East Pittsburgh plant are 190 Westinghouse policemen, high wire fences and 101 searchlights. To enter any Westinghouse plant, employes must present both passes and badges bearing their photographs.

Ready for Action

Walter L. Hitt, Plant Protection Chief at the East Pittsburgh, Pa., works of the Westinghouse Electric and Manufacturing Company, is the "commander-in-chief" of 2,000 employes trained as air raid vigilantes. Should word come by radio or telephone that enemy bombers are heading for Pittsburgh, Hitt and his aides would direct the Westinghouse defense tactics from a sand-bagged control center. Hitt is shown here by a telephone key box which enables him to dispatch instructions to 188 air raid warden posts, first aid headquarters, the fire department and roof-perched plane spotters. On the key board box is an inter-office loud speaker for communication between the control center and police headquarters.

Unlike saboteurs who strike without warning, air raids would be preceded by advance alarms. If enemy aircraft succeed in getting to within 100 miles, or 20 minutes' flying time of Pittsburgh, the Regional Information Center will notify the Pittsburgh Control Center by telephone. This warning immediately will be flashed by telephone to Westinghouse, other industrial plants, hospitals and key points in the Allegheny County.

Draw Up First Line of Defense

When a warning reaches a private telephone line at the Westinghouse control center, the power house will be notified by direct telephone to sound the alert signal. This signal will send to their posts plant wardens, observers, fire watchers and control center operators—key plant protectors who will be at their posts in less than two minutes.

If the bombers reach a point 50 miles or 10 minutes from here, the Pittsburgh control center will flash this information. No change in the Westinghouse first line defense will follow this warning. If the invading planes keep coming and get within a five-minute hop of the Westinghouse plant, the Pittsburgh control center will send out the general alarm. This will dispatch to their stations at Westinghouse, firemen, first air squads, rescue and demolition squads, emergency repair men and the salvage crew.

The general alarm sounded by the plant whistle will warn Westinghouse workmen to shut off their machines, protect vital tools, material and equipment, turn out the lights and take shelter in a predetermined place. Employes have been assigned places of shelter at least 20 feet away from windows, under mezzanine floors, under benches, desks and tables and in other places that offer protection against shell fragments and flying objects.

Office Workers Evacuate Top Floors

Employes in office buildings will evacuate the top three floors when the general alarm is sounded. Plant wardens will conduct them to such places of shelter as central halls, under desks and in coat closets away from windows.

In case of a blackout, lights in the plant yards and multi-storied office buildings will be extinguished as soon as the alert signal (planes 100 miles away) is received. If bombers reach a point only 25 miles away, the general alarm is sounded and all lights are turned off except dim green and red lights in the manufacturing aisles.

Greunke Chief at Appleton

Emmery A. Greunke was appointed Chief of the Appleton, Wis., Fire Department, replacing George P. McGillan, who resigned recently.

Marin County Hard Hit by War

Several of the little communities in Marin County, directly north of San Francisco across the Golden Gate, have been hard hit by the war which has opened up better jobs in defense work for the too often underpaid, overworked firemen.

At Ross, for example, Chief Ed Schumacher, department head for 22 years, was called into the Army and commissioned as a captain. He was a veteran of the first World War.

At Mill Valley, Chief David Arnst, chief there for 15 years, resigned "to take a vacation" and then go into another job waiting for him. Arnst, an electrical engineer by profession, took over the Mill Valley department when his health forced him to leave office work and he has been responsible for developing the fire department in the little community of nearly 6,000 persons to a point where it is one of the best in the State.

At San Anselmo, several men have left to accept jobs in the new shipyards at Sausalito or to become members of the yard's fire department. Most of the firemen in the small Marin County communities work twenty-four hours a day, and with little time off. Because taxing power is small, pay rates have not been up to standard and with living costs rising, many have been forced to leave the departments. San Anselmo now has five paid men and six pieces of apparatus including the emergency auxiliary equipment.

Marin County, hilly and covered with a lush growth of vegetation, offers a fire hazard each year and city and county officials fear the coming fire season because of the shortage of manpower. One factor that may help however, is the great number of Ground Corps Observation Posts scattered throughout the county and the rest of the State. Men and women volunteers who observe all planes for the Fourth Interceptor Command may be called upon to act as fire wardens too.

BOB GREENOCK.

Cunneen Resigns

Terence F. Cunneen, Executive Assistant for Insurance of the Chamber of Commerce of the United States, resigned recently from that capacity to return to private business.

Mr. Cunneen was appointed Manager of the Chamber's Insurance Department in April, 1928, and was promoted to his present position in December, 1940. He is a lawyer and served as Deputy Superintendent of Insurance of the State of New York from 1924 to 1928.

Under his direction the national conservation program of the Insurance Department has been greatly expanded.

While the cooperation of hundreds of local chambers of commerce, fire prevention and insurance organizations and other business groups, broad programs to reduce fire waste have been carried on. More than 800 chambers of commerce are now participating in the annual Fire Waste Contest conducted by the Insurance Department and the National Fire Waste Council. These programs have materially aided in reducing our national fire waste from an amount in excess of $500,000,000 annually to less than $304,000,000 in 1941.

AIR RAIDS DEVELOP NEW KINKS IN BRITISH FIRE FIGHTING

Use of Auxiliary Equipment Gains in Importance in Checking Incipient Fires

By Eric Hardy
Liverpool, England

THREE years of war has given us in Britain a great deal of knowledge about fire fighting and fire prevention with which we can face the rest of the war, and with which Americans can face any dangers on their side of the Atlantic. Many big fires in the air raids upon towns were caused not by direct hits with incendiary bombs, but from sparks blown by the wind from neighboring fires when the fire brigades were taxed to their utmost. The fire-proofing of timbers, especially beams, would have prevented this.

Where new woodwork is being built into structure it should be fire-proofed with chemicals first especially if softwood or conifer. Timber and steel in position can be fire-proofed with asbestos paint or spray, which saved many London buildings because under fire it blistered and formed a sealing vitreous coat to the timber. Ordinary fire-retarding chemicals are not much use in the abnormal conditions of a blitz when 500 major fires may be raging at once in a town.

Out of sixty-seven "fire-proofing" chemicals tested in Britain last year only four had a high degree of effectiveness. They were diammonium phosphate, monammonium phosphate, phosphoric acid and monobasic magnesium phosphate. These salts give off a non-inflammable gas to dilute the nearby oxygen during fire. Much depends also on the type of woods, for softwoods burn much more easily than very hard woods or those hardened with creosote preservation, and any wood will ignite spontaneously when the heat reaches 275 degrees C. Some of the most effective woods with natural fire-resisting properties of their own include karri, whose plankings had only thin charrings on the outside in serious London dock fires, teak, jarrah and, to a lesser degree, Douglas fir. Pine, spruce, fir and hemlock are very bad.

The quickest medium for extinguishing fires has been found to be methyl bromide, for it is safe to use on live electrical apparatus and it is economical. Some of the ideas developed through the "blitz" experiences of members of the Institute of Fire Fighters in Britain have included mobile water dams or tanks of waterproof canvas supported by tubular steel and mesh-wire framework assembled on the spot or on a truck's platform.

In war fires quantities of water have to be hose-conveyed immeasurably longer distances than in peacetime and a water-relaying truck can travel at 30 m.p.h. laying two large-diameter hose lines in order to relay big quantities of water up to two miles. New technique has been necessitated by the need to get fires out before the second wave of aircraft comes over to make use of their glare. Mobile petrol-driven pumps have to be ready to be trailed behind cars or fire engines to pump water from docks, rivers, canals or static water reserves stored in cellars and basements of town buildings or the lakes of public parks. New methods have to be devised for drying and servicing large quantities of hose ready for use by the next night's raids.

Water may, in peacetime, be described by the schoolboy as "the stuff they push under bridges," but in wartime it can be a nuisance in fire fighting when the water poured on roof fires destroys valuable commodities stored in the warehouses below. So buildings with sloping floors, especially of sheet metal, have been devised to drain off the fire-fighting water before it gets to goods in store. It's no good ruining a million dollars of goods when putting out a ten dollar roof fire. Jets have to be concentrated to flood out fires as circumstances—like time bombs—permit. Various heavy trailer pumps have a capacity of 900 to 1,200 gallons of water per minute, the lighter ones 350 to 500 gallons, but allowance has always to be made for the distance or height of the nozzle, because if a fireman wants 75 lb. working pressure on the top of a building 100 feet high, the pump supplying from the ground below must use 125 lb. pressure.

In dealing with the ordinary incendiary bomb, the only effective water method is with a fine spray, not a jet which was found to cause further minor explosions and so distribute the burning magnesium. But much quicker work can be done by "swotting" the bomb with a small bag of sand laid carefully on it, not thrown at it, and then bomb and sand can be raked into a bucket and carried on to waste land or the street to burn itself out smothered with the sand.

A big explosive oil bomb will of course need the professional fire fighters, but I saw one come down at the top of my road, hit the corner of a curb stone by the tramway track and explode, and none of the row of houses immediately opposite, or the tram track caught fire. The blaze involved a wooden tennis pavillion and its group of trees 100 yards away from the bomb fall. It sent up flames as high as a church steeple, but it was all out in a half hour's fire-fighting.

The freak happening must always be expected in war. If the slates or shingles of sloping roofs can project over the rain-gutter, then incendiary bombs will roll off; where the gutter is entirely uncovered we have seen the burning incendiary bombs lodge on them, or behind fancy gable ends, chimney stacks, etc., and by the time ladders are brought up and a fireman is on the roof the roof has caught fire and perhaps the bomb burning its way through.

Incendiaries will generally bounce off a flat 6-inch concrete roof. In one raid here some incendiaries hit the tin helmets worn by firemen, without any injury to the men!

Speed is everything, but the worst thing I found about the incendiary is its sudden dazzling flare up. But one must guard against those containing arsenical smokes when they have to be tackled indoors, or in a cock loft under a roof; and against the explosive sort which explodes in the first two or three seconds after firing, in order to scatter burning thermite. For the former one can use a wet sock over one's gasmask; for the latter, any shield like a dust-bin lid. Ordinary soda-water siphons can be adapted for home fire-use, with a rubber nozzle, to save water.

New fire detectors have been devised to operate from the heat given out by the fire bomb. An installation of wires

(*Continued on page* 540)

New York City Fire Department Bowling Team

Assistant Chief of Department John J. McCarthy presents a trophy to the New York Fire Department Bowling Team for winning seventy-five games out of a hundred. Left to right are Fireman Stubing, Battalion Chief Ryan, Fireman Jacobs, Fireman Maxwell, Fireman Van Steenburgh, Assistant Chief of Department John J. McCarthy, Battalion Chief Connelly and Fireman Kruger.

FIRE FIGHTING EQUIPMENT LIMITED BY W. P. B. ORDER

Stirrup Pumps, Automatic Fire Alarm Systems, Sprinkler Systems, Included in Limitation Order

COMPLETE text of the order limiting production of protective fire equipment, particularly stirrup pumps, follows:

Part 1073—Fire Protective Equipment
General Limitation Order L-39, as amended July 11, 1942

Section 1073.1 **(General Limitation Order No. L-39)** is amended to read as follows:

The fulfillment of requirements for the defense of the United States has created shortages in the supplies for the war effort, for private account and for export, of materials entering into the production of fire protective equipment; and the following order is deemed necessary and appropriate in the public interest and to promote the war effort:

§ 1073.1 **General Limitation Order No. L 39**—(a) **Definitions.** For the purpose of this order:

(1) "Fire protective equipment" means:

Automatic fire alarm systems.
Automatic sprinkler systems.
Couplings, playpipes and allied fittings.
Fire hydrants.
Hose dryers.
Hose racks.
Indicator posts.
Lightning rods.
Piped extinguisher systems.
Portable fire extinguishers, including back pack types.
Portable generators.
Stirrup pumps.
Water spray nozzles.

and all other fire protective devices and appliances for preventing and extinguishing fires, excepting: self-propelled and trailer, types of fire apparatus, and parts and accessories therefor.

(2) "Stirrup pump" means a manually operated portable piston type pump used to draw water or other liquid from a separate container to extinguish or control fires.

(3) "Copper base alloy" means any alloy in the composition of which the weight of copper equals or exceeds 40 per cent of the weight of all metal in the alloy.

General Restrictions

(b) **General restrictions.**—(1) **Restrictions on use of scarce materials in fire protective equipment.** Except as provided in paragraph (c) below, or upon specific authorization of the Director of Industry Operations, no person shall incorporate in fire protective equipment, or parts thereof, any aluminum, bismuth, cadmium, chromium, copper, copper base alloy, lead, mercury, monel metal, nickel, tin, stainless steel, zinc, asbestos, rubber, neoprene or other synthetic rubber, except to the extent permitted by Appendix A hereof.

(2) **Restrictions on 2½-inch Brass Fire Hose Couplings.** Except on specific authorization of the Director of Industry Operations, no 2½-inch brass fire hose couplings in the possession or control of any fire hose manufacturer or distributor on April 27, 1942, shall be transferred, sold or used.

(3) **Restrictions on Foam Extinguishers.** No person shall purchase or accept delivery of any foam extinguisher except for use in the protection of inflammable liquids, and no person shall sell or deliver any foam extinguisher which he knows or has reason to believe will be used in violation of this paragraph.

(4) **Restrictions on Manufacture of Stirrup Pumps.** Except as provided in paragraph (c) (2) below, no person shall manufacture any stirrup pumps or parts thereof, except to fill purchase orders from the United States Army, Navy, Maritime Commission, War Shipping Administration, Defense Supplies Corporation, or the government of any country entitled to deliveries under the Act of Congress of March 11, 1941, "An Act to Provide for the Defense of the United States." (Lend-Lease Act.)

(5) **Restrictions on Manufacture of Foam and Alkali Metal (Loaded Stream) Extinguishers.** No person shall in any quarter complete the manufacture of any type of foam, alkali metal salt solution (loaded stream), or back pack extinguishers in excess of 25 per cent of the total of such type (irrespective of size) manufactured during the twelve-month period ending November 30, 1941, except to fill purchase orders or contracts from any purchaser listed in subparagraphs (i), (ii) or (iii) below. In determining the number of extinguishers manufactured during said twelve-month base period ending November 30, 1941, extinguishers manufactured to fill contracts or purchase orders from any of the following shall be excluded:

(i) The United States Army, Navy, Maritime Commission, War Shipping Administration, Panama Canal, Coast and Geodetic Survey, Coast Guard, Civil Aeronautics Authority, National Advisory Committee for Aeronautics, the Office of Scientific Research and Development;

(ii) The government of any of the following countries: the United Kingdom, Canada, and other dominions; Crown Colonies and protectorates of the British Empire, Belgium, China, Greece, the Kingdom of the Netherlands, Norway, Poland, Russia, and Yugoslavia;

(iii) Any agency of the United States Government for delivery to or for the account of any country listed above, or any other country including those in the Western Hemisphere, pursuant to the Act of March 11, 1941, entitled "An Act to Promote the Defense of the United States." (Lend-Lease Act.)

(c) **General Exceptions.** (1) Paragraphs (b) (1) and (b) (2) shall not apply to:

(i) Completed fire protective equipment or parts thereof (excepting brass couplings), which were finished and ready for assembly on February 27, 1942, provided such fire protective equipment or parts are delivered to fill purchase orders bearing a preference rating of A-2 or higher, or

(ii) Brass fire hose couplings provided such couplings are delivered to fill purchase orders from the United States Navy, Maritime Commission, or War Shipping Administration, and are for use on board ship, or are delivered to fill purchase orders from the Panama Canal, or

(iii) Brass fire hose fittings, brass fog spray nozzles and brass fog spray nozzle applicators (and attachments for such applicators) for a period of 90 days after July 11, 1942, provided said items are delivered to fill purchase orders from the United States Navy, Maritime Commission, or War Shipping Administration, and are for use on board ship, or are delivered to fill purchase orders from the Panama Canal, or

(iv) Carbon dioxide extinguishers manufactured in accordance with specifications of the United States Army, Navy, Maritime Commission, or War Shipping Administration, provided such carbon dioxide extinguishers are delivered to fill purchase orders bearing a preference rating of A-1-J or higher.

(2) Paragraph (b) (4) shall not apply to stirrup pumps manufactured entirely from other than nonferrous metal parts which were fabricated or semi-fabricated on the 11th day of July, 1942.

Penalty Provided

(d) **Violations.** Any person who willfully violates any provision of this order, or who, in connection with this order, willfully conceals a material fact or furnishes false information to any department or agency of the United States is guilty of a crime, and upon conviction, may be punished by fine or imprisonment. In addition, any such person may be prohibited from making or obtaining further deliveries of, or from processing or using, material under priority control and may be deprived of priorities assistance.

(e) **Appeal.** Any person affected by this order who considers that compliance herewith would work an exceptional and unreasonable hardship upon him, may appeal to the War Production Board, setting forth pertinent facts and the reasons such person considers that he is entitled to relief. The Director of Industry Operations may thereupon take such action as he deems appropriate.

(f) **Communications.** All reports required to be filed hereunder, or communications concerning this order, shall unless otherwise directed, be addressed to: War Production Board, Safety and Technical Equipment Branch, Washington, D. C.—Ref.: L-39. (P. D. Reg. 1, as amended, 6 F. R. 6680; W. P. B. Reg. 1, 7 F. R. 561; E. O. 9024, 7 F. R. 329; E. O. 9040, 7 F. R. 527; E. O. 9125, 7 F. R. 2719; sec. 2(a). Pub. Law 671, 76th Cong., as amended by Pub. Laws 89 and 507, 77th Cong.)

Issued this 11th day of July, 1942.

J. S. KNOWLSON,
Director of Industry Operations.

Appendix A—to General Limitation Order L-39 As Amended July 11, 1942

Pursuant to the provisions of paragraph (b) of the above order, the fol-

lowing materials may be incorporated in the manufacture of fire protective equipment, or in component parts thereof, to the extent indicated:

(1) Aluminum, primary or secondary;

(i) In extinguishers for use in airplanes;

(ii) As foil in electric condensers for automatic fire alarm systems, approved by Underwriters' Laboratories, Inc., or Factory Mutual Laboratories to the extent essential to the efficient functioning of such condensers; or

(iii) (Secondary aluminum only) in zinc die castings not in excess of 2 percent by weight; or up to 4 percent upon specific authorization of the Director of Industry Operations;

(2) Bismuth, as a component of fusible link alloy;

(3) Cadmium;

(i) As a component of fusible link alloy or solder;

(4) Chromium:

(i) For plating of parts of automatic fire alarm systems and sprinkler heads to the extent essential to the efficient functioning of such systems or heads; or

(ii) As a component of stainless steel the use of which is permitted by paragraph (10) hereof;

(5) Copper or copper base alloys, in:

(i) Pumps for carbon tetrachloride extinguishers, and other pumps for extinguishers manufactured within 90 days after July 11, 1942, for delivery to or for the account of the United States Army, Navy, Maritime Commission, or War Shipping Administration;

(ii) Lock nuts on removable hose connections;

(iii) Bodies, ends, inner chambers, valves and their competent parts for vaporizing liquid, 2½-gallon foam extinguishers, or loaded stream extinguishers;

(iv) Fittings, strainers, syphon tubes and valves for carbon dioxide and gas operated dry powder extinguishers;

(v) Twin and special nozzles of pump type extinguishers;

(vi) Snap clamps, clamp pins and expansion rings on "Jones" type fire hose couplings;

(vii) Latch assembly and expansion rings of "British" type fire hose couplings to the extent essential to the efficient functioning of the parts;

(viii) Swivels, wires and expansion rings on screw type fire hose couplings;

(ix) Swivels, wire, rollers and expansion rings of suction hose couplings;

(x) Hose and hydrant adaptors;

(xi) Swivels, wires, clappers and seats of Siamese connections;

(xii) Playpipes made only from drawn or brazed sheet brass or cast brass, not more than 2½" in diameter at the base, and no more than 15" long;

xiii) Ball type and cylinder type shutoff nozzles;

(xiv) Nozzle tips:

(xv) Portable deluge nozzles, not including tips and handles;

(xvi) The following hydrant fittings to the extent essential to their efficient functioning: valve seat discs, guides, operating valve stems, stuffing boxes, nuts, bolts, bushings, rivets and retainer rings;

(xvii) The following indicator post fittings to the extent essential to their efficient functioning; valve stems, seats, discs, packing glands and glands of bonnet openings;

(xviii) The following parts of portable generators and fixed pipe systems, to the extent essential to their efficient func-

(*Continued on page* 538)

PAPER WAREHOUSE FIRE GIVES N. Y. FIREMEN A HARD FIGHT

Loss Estimated at $175,000; One Ladder Truck Wrecked.

By Jerry Daly

A FIFTY year old seven story brick warehouse filled with miscellaneous new paper stock ranging from pulp to vellum as well as tons of wall paper, gave the New York Fire Department a very tough battle on June 20, and ended when both sidewalls expanded under Niagaras of water and crashed to the roofs of several one story structures on both sides. Providentially not a single fire fighter was seriously hurt, although fifty of them were treated chiefly for conjunctivitis and a few for minor injuries.

A seventeen year old spare ladder truck which was obviously out of harm's way seventy-five feet from the north wall of the warehouse was wrecked, but not by the wall of the warehouse. It was buried by the wall of an anceint one-story Greenwich Village trucking office which was demolished by the collapsed wall of the taller structure.

The warehouse was 165 x 50 feet and extended from Washington to Greenwich streets midway between Clarkson and Leroy streets in the heart of the lower westside of Manhattan Island, one block from the waterfront. The occupant was a going concern, ten years in that location, with $175,000 insurance. The building was devoid of fire protection excepting for iron shutters on front and rear. It complied fully with the law. There was no watchman and the building had been locked on Friday night June 19 for the week-end.

On Saturday morning at 9.56 electrical fires occurred simultaneously in a one-story transfer express office at 587-89 Washington and in a one-story forwarding concern at 595-97 Washington. These premises were open for business and the occupants tackled the fires successfully with sand and chemical extinguishers. Coincidental with the discovery of these fires, a civilian reported to the Fire Department by telephone, as did the Police, that Service manholes in Washington street were emitting smoke and fumes.

The pumper, truck and chief first due were special called, but there was little for the fire fighters to do. As a pre-

Six Lines Battle Five Alarm Fire

Firemen direct six high pressure lines on the five alarm warehouse fire on June 20. Ten firemen were overcome by fumes. The street below is a mass of hose lines.

caution, Chief James W. O. Wood of the 5th Battalion ordered the warehouse at 591-93 Washington opened. Capt. George Hughes of Rescue 1 entered and went to the cellar with two men and pulled the main switch.

They found fires on the third and fourth floors. The street box was pulled at 10.07. The warehouse was as tight as a drum and the task of opening shutters had to be executed from the outside. Second alarm was sounded at 10.32. A tower was raised on the Greenwich street front as firemen on aerial ladders pried open iron shutters. The smoke was heavy and extensive. High pressure was raised to 150 at 10.48 and a third alarm was sent by Asst. Chief Arthur Wright at 10.52. At 11.04 the pressure was raised to 175 and at 11.09 the fourth alarm was ordered by Asst. Fire Chief John J. McCarthy. This brought Fire Commissioner Patrick Walsh. Another tower was raised on the Washington street front and a dozen hand lines were operated from the New York Central R. R. freight structure which is twenty feet above the street level opposite the Washington street front.

Commissioner Walsh sent the fifth alarm at 12.02 when the pressure was at 200. This gave him a total of twenty-six engine companies with hose wagons, six trucks, two fireboats*, two water towers and one rescue company having a combined total of 220 company officers and men in charge of eight chief officers, including Commissioner Walsh who is also Chief of Department. In addition there was the usual attendance of department doctors, ambulances, nurses, chaplains, police emergency trucks, fire marshal, police detectives, a score of army, navy and coast guard intelligence personnel and Mayor La Guardia. But there were no war defense or national security angles to the origin of the contents. The paper company had no war orders and was the only occupant of the building.

*Fireboats did not stretch. The crews went ashore and went to work.

Photo by Bill Herrion

The End of Number 5 Truck

Tons of debris fell upon Hook and Ladder 5, and it took these firemen hours to remove the bricks so the twisted truck could be dragged out.

At 12.45 p.m. the walls could stand the weight no longer. What was expected, happened. Firemen ducked under stalwart fire apparatus. A few of them were struck by flying bricks, but none were seriously hurt. The little old buildings to the north and the south were ruined. High pressure was shut down at 2.29 p.m. and low pressure was used thereafter. The loss will be total to the contents and what remained of the old warehouse was ordered razed. A couple of spare pumpers and a detail of men sprayed the ruins for two days.

Scene at the Fire Just as the Wall Began to Crumble

Six Die After Fire in Gas Shelter

Six members of a family of seven perished in a fire which was caused by the exploding of an oxygen tank in a gas shelter which Darwin Lyons had prepared for his family in the event of an enemy gas attack.

Lyons was conducting an experiment ing his "workshop" in his home in Huntington Park, Cal. Lyons, who believed the room was fireproof and who had equipped the room as a blackout room as well as an air raid and gas attack shelter, struck a match to read a pressure gauge on the tank. Oxygen, which had apparently leaked from the tank, produced an intense fire. There was no explosion, but flames filled the small room. Swiftly they raced through the entire house.

Trapped in her bedroom, a crippled daughter made a desperate effort to escape. She staggered to an adjoining bathroom, half-filled the tube with water and was fatally burned before she could plunge into the tub.

The only survivor was a four-year-old boy, who remained in his crib, unscathed.

U. S. MILITARY AIR BASE* WELL PROTECTED AGAINST FIRE

Hamilton Field Equipment Modern; Training of Personnel Thorough

By Bob Greenock

Up at Hamilton Field, Northern California Army bomber base in Marin County, Uncle Sam is ready to go to a fire. The field is completely equipped for action against any possible fire hazard, either in the flying field or in the post proper.

Official Photo, U. S. Army Air Forces

Captain Jesse Wallace of "B" Crew at Hamilton Field Fire Alarm Switchboard

Equipment is the most modern. Personnel is thoroughly trained. In line with the War Department's policy of replacing soldiers with civilians wherever possible, eleven men of the Hamilton Field department are civilians and eight are soldiers. Actually, the fire department does not consist of just nineteen men, however. Every man at the field has had some kind of fire fighting training, knows how to handle incendiary bombs and is ready to turn fireman at a moment's notice.

Chief Thomas F. Carter himself is a veteran fire fighter. For twenty-five years he was a member of the Los Angeles Fire Department. Before coming to Hamilton Field, he was Chief of the Vultee Aircraft factory's fire department.

Chief Carter began his fire fighting career in 1914, when he was put on the extra list of Engine 25 at Fifth and Maple Streets, Los Angeles. He got his permanent appointment in 1915. During his service he worked on various assignments, hose and engine crews, rescue and salvage companies. For eleven years he was in Headquarters where he held rank as a lieutenant and later a captain.

The chief began his career in the horse-drawn vehicle days. Picturesque as they were, he's glad to have fast, efficient equipment with which to work at Hamilton Field.

Because of the emergency, Chief Carter believes in having his department very much on its toes. Men normally are on duty twenty-four hours and then off twenty-four. "This is a twenty-four-hour-a-day seven-day-a week Army and that"s the way this fire department is going to operate," said the chief when the war broke out. And that's the way it does.

Assistant to Chief Carter and ranking Air Force officer of the department is First Lieutenant Kenneth E. Martin. Other men in the department include J. W. Wallace, formerly of the Modesto, Calif., Fire Department and now captain of "B" shift; Frank Ramelli of the Los Angeles Fire Department; Pvt. Ivan H. Acton, formerly of the March Field Fire Department; August C. Benassini, formerly of the Daly City, Calif., Fire Department; and Keefer Patton who learned his fire fighting with the U. S. Forestry Service at Blairsdon, Calif.

Equipment at the field consists of one U.S.A. pumper with a Continental motor, a Ford pumper, a crash truck which is stationed near the landing mat at all times, a second Ford pumper equipped with a small complement of ladders, an ambulance, a chief's car equipped with utility equipment and a general utility truck.

Total hose carried by the various rigs includes 3,200 feet of 2½ inch hose.

In addition, each building on the field has its own ladders, extinguishers, buckets of sand, etc. There are about 1,000 extinguishers alone. The department is charged with other duties besides fighting fire. They include giving air raid alert signals, and, in such cases, apparatus is posted at key positions around the field. The department is responsible for making periodic inspections in hangars and barracks and for the maintenance of the extinguishers.

The alarm system is similar to that used in most cities with the exception that the boxes register in headquarters without going through any central alarm station. All boxes have a telephone so that after an alarm has been turned in, the fire alarm operator can ring back and talk to whoever turned it in.

The nineteen men of the department have their own barracks. Included is a recreational room, the usual complement of showers, sliding poles and other

Official Photo, U. S. Army Air Forces

Hitting the Pole

Private Curtis Jako and Captain Jesse Wallace of "B" Crew turn out for an alarm.

Official Photo, U. S. Army Air Forces

Fire Fighters at Hamilton Field

At left is the fire chief's truck, next one of the crash wagons, a ladder truck, a hose truck and a general utility truck.

*The above story was written from information compiled by the Public Relations Office at the U. S. Army Air Base, Hamilton Field, California. All pictures are Official Photographs, furnished by courtesy of the U. S. Army Air Force.

equipment standard in any fire house. There are hose drying racks and extra lengths of dry hose.

When an alarm is sounded, a "waker" bell is sounded. Each fireman hits the floor, goes to his proper place on the apparatus and the rigs are off to the proper location.

Official Photo, U. S. Army Air Forces

Fireman Garland Beasly and Chief Thomas Carter Test Foam Equipment

While the department has several asbestos suits for close-in fighting of plane fires, men working on the hangar line are also equipped with the white, hooded suits.

Training under Chief Carter is thorough. Men are taught how to lay hose, use pumps, drive the trucks, set up ladders, etc. They are also drilled in the location of boxes, hydrants and streets so there will be no delay when the runs are made.

As to the troops, when fire call sounds, they are formed in front of barracks and are at the disposal of the chief for salvage or any other work he may need them for. In case of fire on the hangar line, the Operations Office is responsible. The same is true for fires on the landing field. A horn is sounded near the crash truck, giving numbered blasts to indicate what runway the fire is on. Such fires are answered by the ambulance crash truck, a pumper and alert crews and works in the engineering shops.

Yes, Uncle Sam is ready to go to a fire at Hamilton Field and at all his air fields, Army camps and military establishments wherever they may be.

Kronemeyer Assistant Chief at Defense Plant

Lieutenant Fred J. Kronemeyer,a member of the New York Fire Department for twenty-six years, has been selected as Assistant Fire Chief at the Plum Brook Ordnance Works in Sandusky, Ohio. The Lieutenant took over his new position on July 2.

Lieutenant Kronemeyer entered the New York Fire Department on November 10, 1916, and retired on July 1 of this year. He served in both Engine Companies and Truck Companies.

FIRE DEPARTMENT EMPLOYEES IN AMERICAN MUNICIPALITIES

Federal Survey Shows Paid Force Totals 118,000 Men

THERE are 118,000 paid employees of city fire departments in the United States according to the analysis of October, 1940, returns to the State and Local Government Quarterly Employment Survey. Included are volunteer firemen who received pay. An estimated additional 167,000 active members of volunteer fire companies were available on call, but received no pay whatever or were not called out on fires during the month of October.

For that month, the total pay roll for all fire department employees in the United States was $15,150,000.

Table 1—Total Number of Employees and Amount of Pay Rolls of Fire Departments in October, 1940

Cities by population size	Number of employees: Total including active volunteers	Number of employees: Paid employees	Amount of pay roll for month in thousands
Cities: Total	285,000	117,700	$15,150
Over 1,000,000	19,600	19,600	4,500
500,000-1,000,000	9,900	9,900	1,910
250,000-500,000	10,700	10,700	1,910
100,000-250,000	11,800	11,800	1,990
50,000-100,000	9,900	9,900	1,620
25,000-50,000	10,100	9,400	1,350
10,000-25,000	17,500	11,300	1,150
5,000-10,000	22,500	8,700	440
2,500-5,000	29,800	7,500	200
1,000-2,500	53,000	9,000	60
Under 1,000	90,000	9,600	30

Total numbers of employees and amounts of pay roll for cities of various population sizes are shown in Table 1.

What expansion of fire protection facilities would be needed to provide adequate safety in war time? British authorities estimate ten auxiliaries for every paid fireman. The Office of Civilian Defense, in connection with its program for enlistment of auxiliary firemen, fire watchers, and bomb squads in American cities has proposed that five volunteer firemen be added for every paid full-time fireman. The need for fire auxiliaries has also been estimated in terms of poulation at four per thousand as in the case of police volunteers. Each fire defense unit will consist of six to ten men. What this will mean in terms of existing fire protection forces in the average city of various population sizes is indicated in Table 2, which also shows the average number of employees and amount of pay rolls now allocated to the function of protection against fire.

In addition to the auxiliary fire protection squads, the Office of Civilian Defense is also providing for the enlistment of volunteer fire watchers, rescue squads, bomb squads, and demolition and clearance crews. Although these functions have not previously been in the province of fire protection, they come close to its borders. The Civilian Defense program envisages additions of new functions to almost all departments.

Training for auxiliary fire defense units will consist of brief courses in first aid (ten hours), air raid defense (ten hours), gas defense (two hours), general course (five hours) and drill (five hours).

If regular fire protection personnel were expanded by volunteer memberships at the ratio recommended by the Office of Civilian Defense, the large cities would be most notably affected by the change. The volunteer fire company is already a familiar organization in a small town or village and frequently includes within its membership many more persons than are active and actually respond to each fire alarm. For the city or town which already has a volunteer fire company, the problem of preparation for home defense is merely one of reorganizing the existing personnel and providing special instruction regarding air raids. For large cities which have in the past depended for most fire protection upon a permanent full-time staff of fire department employees, home defense measures mean the organization of an entirely new auxiliary force including thousands of volunteers.

The figures on employment in fire departments, shown in table 2 are based on percentage distributions of general governmental functions and corresponding estimates of total city employment in Table 1. Estimates of the number of active volunteers available on call but receiving no pay during the month of October, 1940, were based on returns to the State and Local Government Quarterly Employment Survey.

Comparison with lists of membership of volunteer fire companies in certain states indicates that the estimates shown on Table 1 are considerable lower than the total membership. As stated above, this is because volunteer fire companies frequently include many in active members. In the northeastern states, there are seven cities of less than 25,000 population which report a total membership in each of their respective volunteer fire companies of 1,000 persons or more. Obviously these members are not all active in the sense of responding to fire alarms. The "active volunteers" as estimated in Table 1 are those who would actually respond to a fire alarm if there

Table 2—Average Number of Employees and Average Amount of Pay Rolls of Fire Departments* in October, 1940

Cities by selected population size	Average number of Employees — Average number including active volunteers	Average number of paid employees	Average amount of pay roll for month	Average number of auxiliary firemen needed for home defense*
500,000	750	750	$140,000	3,750
250,000	375	375	63,250	1,875
100,000	130	150	22,500	750
50,000	55	75	10,750	375
25,000	43	38	3,250	188
10,000	26	15	700	75
5,000	24	8	200	38
2,500	20	5	50	24
1,000	20	3	5	13

*Based on the ratio of five auxiliaries for every paid employee. The alternative ratio of four auxiliaries for every 1,000 population would yield smaller averages.

were one. This figure is necessarily a rough approximation, but it provides a better basis for sizing up the existing situation of fire protection in small towns than estimates of the total membership. Because of the traditional popularity of volunteer fire departments in northeastern States, the membership of volunteer fire companies is largest in that region.

METHODS OF CONTROLLING FIRES ON PIERS AND VESSELS

Some Recommendations for Lessening the Danger of Destructive Ship and Pier Fires

By James J. Deasy*

THE recent disastrous fires on piers and vessels are directly traceable to the inadequate means of getting water on fires of that type. Of course, combined with this is the disregard of recommended good building maintenance and fire preventive practices. It is pathetic to think that the availability of one or more solid water streams at such fires is entirely dependent on the fire department that responds to the alarm.

It is needless to say that there is always an interval between the time the fire starts or is discovered, the transmission of the alarm and the subsequent response of the fire department. Possibly employees or others, before transmitting the alarm, will have made an amateurish attempt to extinguish the fire.

Where the marine hazards outlined prevail, especially where valuable war material is being stored, or loaded on or unloaded from vessels, I suggest the institution of the following practices so that there will be fairly decent protection against any rapid extension of fire:

a. If at all available, an adequate number of regular firemen, properly officered, to patrol the pier or vessel, or both, at all times.

b. At the bulkhead, trailer pump or similar equipment of at least 500 gallons per minute capacity and adequate nozzle pressure capacities, with a total of 1,000 gallons capacity for two (at least), to be ready with their suctions in the water and large diameter hose stretched to cover the pier or the vessel or both, "this hose to be stretched and ready at all times with proper control nozzles thereon." It may be possible that gate connections can be placed on 2½-inch or even 3-inch lead lines to take lines of smaller diameter therefrom.

Positive Transmission of Alarms Necessary

c. A positive means of direct telegraphic transmission of alarms to be the first obligation; second, telephone; third, radio; fourth, messenger.

d. Where members of regular fire departments are not available, the patrol units previously mentioned should be well-drilled and physically qualified groups under the direction of experienced fire officers. Labor organization affiliations or other problems of this type should be entirely eliminated in selecting this personnel.

e. In the case of the "Normandie," due to the fact that much if not all of the foregoing was disregarded, our nation was left without the services of a vessel whose value cannot be estimated.

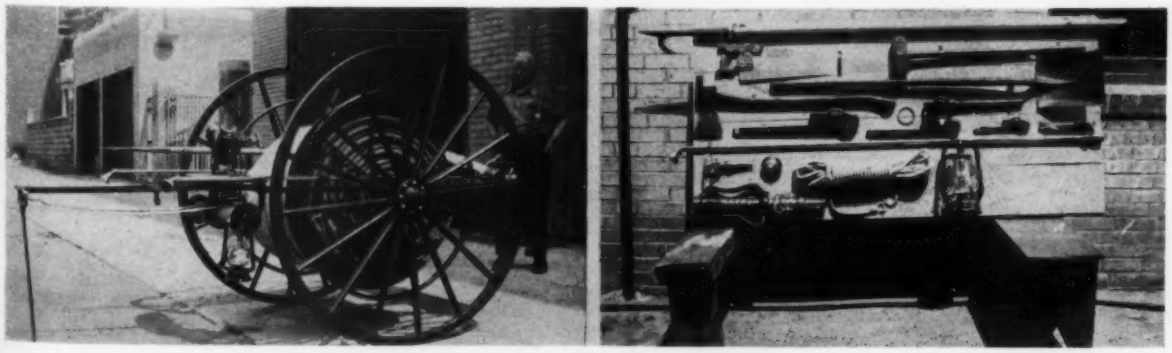
f. While "authority" is essential in all activities for effecting proper coordination, the one or ones best capable of directing fire control operations, regardless of rank, bureau or department, should be given the power to direct the operations of the fire-fighting forces.

g. Well in advance of instituting all the foregoing suggestions, it would be good policy for all interested individuals and groups, governmental, municipal, underwriters and interested private concerns, to meet and outline definite methods of conducting all of the previous suggestions, these meetings to be held at intervals so that any new problems arising in the interim can be solved.

*Battalion Chief (Retired) of New York Fire Department. From a paper presented before the N.F.P.A. Convention, Atlantic City, N. J., May 13, 1942.

Delaware Firemen Postpone Meeting

The Delaware State Firemen's Association convention has been formally called off, plans being made for a meeting of the executive committee to be held on September 16 in Delmar, instead of the usual meeting.



Jumpers Carry Hose for Auxiliaries at Harrison, N. J.

The Harrison, N. J., Fire Department recently added two hose jumpers to the equipment of its Auxiliary Fire Companies. The jumpers carry both 2½-inch and booster hose, as well as a set of fire department tools. The picture at the left shows one of the new jumpers, while that at the right shows the tools carried in the tool box. Each jumper also carries two fog nozzles. Andrew T. Callahan is Chief at Harrison.

Oil Truck Blaze Perils Traffic

One man was burned, an oil station was damaged, and a car was destroyed, when a 3,700-gallon gasoline tank transport truck caught fire while part of its cargo was being unloaded at a filling station in Council Bluffs, Ia., on June 16.

To prevent the fire from spreading and causing further damage, the driver of the station service truck raced to the front of the truck and leaped into the cab of the vehicle, which was already afire over the rear gas compartment, and drove it out of the station driveway. He drove it about thirty feet into the street and then leaped from the truck which was left burning. Immediately after he left the truck, the entire truck was enveloped in flames.

Smoke and flames leaped skyward and were visible for several blocks. Heat from the flaming gasoline was so intense, crowds were forced to keep far from the blazing inferno. The asphalt covering on the street crossing was burned.

Four fire companies answered the alarm.

Fire Chief Waldo Merril said the fire may have been started by the exhaust of a car which was being serviced in the station.

Although the truck was loaded with 3,700 gallons of gasoline, less than 200 gallons were lost in the fire. The rest of it was pumped out later into other trucks.

Council Bluffs Firemen Fighting the Fire

Two deluge sets with 1¼-inch tips were used, allowing the stream to break over the truck. One deluge set was kept in operation until 9 P.M., four hours after the fire started, until the gasoline cooled sufficiently to prevent reignition. Officials removed gasoline from the truck before moving it.

Fire Sweeps Office Building

A charwoman, the mother of six children, leaped or fell to her death from the ninth floor, and a stationary engineer and a woman, supervisor of the charwomen, were trapped and practically smothered and roasted to death in an elevator which stalled between the fourth and fifth floors, four other charwomen were overcome by smoke while fleeing down the stairs, and a fireman was slightly injured when a roaring quick burning two alarm fire swept through eighteen offices and the corridors of the third floor of the Highland Building, a thirteen-story fireproof office structure in the heart of the East Liberty high value business district, of Pittsburgh, Pa., early on April 22nd.

One of the charwomen who was working on the fourth floor, gave the first alarm of fire to the occupants of the building when she discovered the corridor filled with smoke.

A motorist hearing the crash of broken glass as he was driving past the building, backed his car up and discovered flames bursting out of the third story windows. Pulling his car into the curb, he ran to the street box, Fire Alarm Station 612, located at Penn and Highland Avenues, a half block from the burning building, and sent in the first alarm at 2:18 A.M., and waited until the arrival of the Firemen and directed them to the scene of the fire.

When Engine Companies No. 8, 16, 28 and Truck Co. 8 arrived in command of Acting Battalion Chief, William Fulham of the Third Battalion, the entire third floor was involved in flames. Acting Chief Fulham, seeing that a dangerous fire was in progress, immediately sent in the second alarm, which was answered by Engine Companies No. 6, 14, 38 and Truck 14, Deputy Chief, Charles McDermott and Chief of Department, Edward J. Kerr, who upon his arrival, took command of the fire.

It is believed that the fire, which originated in the office of a dentist, was caused by a small gas burner or hot plate, with a rubber hose connection, on which the charwomen made their coffee for their lunch period, which was about 2:30 A.M. Evidently a defective rubber hose gas connection, or the coffee pot boiling over, extinguished the flames under the gas burner, and an electric spark from some of the electrical equipment or appliances in the dentist's office, ignited the escaping gas, causing the explosion and fire which followed.

Firemen under the direction of Fire Chief Edward Kerr and his Chief Officers, fought the fire at close range and by hard, quick, efficient work, they kept the fire confined entirely to the third floor. Offices on the second floor and a drug store, a candy and cigar counter, a storage room and a vacant store room on the first floor were only slightly damaged by water.

In extinguishing the fire, three pumper streams and three hydrant streams were used by the firemen with 3,100 feet of 2½-inch hose in service. Other equipment used included 250 feet of 1-inch lead line hose, 356 feet of ladders, one body wrapper and eleven salvage covers.

Nine pieces of motor fire apparatus, two 1,000-gallon pumpers, four 750-gallon pumpers, one combination, hose, turret and water tower wagon, and two 75-foot tractor drawn aerial trucks, with a manual force of 39 firemen responded to the two alarms.

WILLIAM E. PATTERSON.

View of the Corridor Showing Some of the Burned Offices

Correspondence

Attic Fire

To the Editor:

This may be a little out of the line of fire protection, but as you know, the Office of Civilian Defense is stressing cleaning out attics.

View of the House, Showing the North Wing. The Other Wings Were as Badly Damaged as That One

Mexico is a town of about ten thousand population, and we have no ordinance for residence inspection. We do inspect within the fire limits quarterly.

Herewith is a picture of a fire we had on the afternoon of June 22nd. And you can see what we ran into. We could have made an easy stop if the attic had been clear. As it was, we had about as much water damage as fire damage. The lady of the house had burned up a lot of trash in the furnace and sparks fell on the east wing and burned a hole in the roof and fell through into the loose stuff that was stored therein. The whole attic was afire before a passer-by noticed it and sent in an alarm. The house faces the west.

Yours truly,
R. R. SIMS, Chief,
Mexico, Mo.

Alarm System of Rossford, Ohio

To the Editor:

We service the City of Rossford and the Township of Ross. Whenever a fire occurs, the call is taken by a guard, at the main gate of the Libbey-Owens-Ford Glass Company, who is on duty twenty-four hours a day. When the call is completed, he plugs in an auto call which starts a bell ringing in every fireman's home. Our territory that we cover is divided into fifty-five districts and each district has a number. When the call is made, the man on duty ascertains what district the fire is in, and then he plugs in the corresponding number of the auto call. Each fireman has a chart in his home and can always locate the fire by comparing the number of rings with this chart. For example, a fire is in district 23. The bell will ring two times, pause, then ring three times. When the firemen reach the station house and are getting on their equipment, they also check the fire district number again. We have an intercommunication system with one end in the guard house and the other end in the station house. As the driver of our truck steps into the driver's seat, he asks from his end for directions. The guard then tells him just where the fire is. The driver repeats his instructions and when the affirmation comes through we leave for the fire. We also have a ticker tape and a large district chart to check. Now this seems quite complicated in writing, but we have been actually clocked in getting on our way in three minutes in the summer and five minutes in the winter. The men live within a radius of three blocks from the station house, so you can see no grass grows under our feet.

We have quite a large territory to cover as the township is all rural, but we have been very successful in keeping fire loss at a low rate.

At the present time we have given an auxiliary fireman's course and are about to start another one. We are also contemplating a rescue squad.

Respectively yours,
WILLIAM FITZGERALD, Secretary,
Rossford, Ohio, Fire Department.

National Fire Fans Club

To the Editor:

Novel among the many ways fire fans go about following their hobby is the newly formed Fire Fans of America organization, which embraces fans from east to west coasts and many cities between. Starting from the friendships brought about through letters from one fan to another, the club sprang up and, while still in the first weeks of its life, gained nearly twenty members.

Sectional get-gethers had been planned, but when the rubber shortage and east coast gasoline rationing banned such activities for members who were spread ot over the entire country, the club hurdled the difficulty by starting up a monthly news letter, which carries club and outside news to all members, although they are hundreds of miles apart.

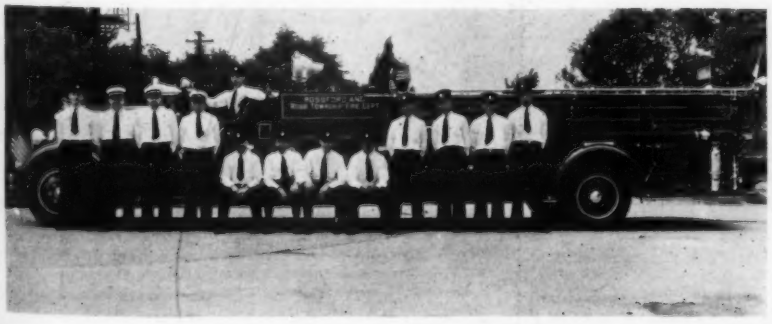
As is the case with most fans, pictures are the main interest of the club. Some members are model builders, while others collect bells, fire helmets, badges and other fire fighting equipment. Pictures, however, are the most traded item, the requirements of the club membership being a trade of at least five pictures per quarter year with at least five members. These traded pictures include those of apparatus, fire scenes, or reproductions of old horse and hand-driven trucks. Each club member tries to get a better exclusive shot of some apparatus or fire than his fellow club member. In most cases, however, the members end up by trading the good shot for something of equal caliber owned by a fellow trader.

Members of the Fire Fans of America are all active in fire department affairs, either serving as auxiliary firemen for the duration, or in service with fire departments on a more permanent basis. Members include an official fire department photographer, an assistant fire chief, several fire department officers and firemen, and many auxiliary fire fighters in the large cities. All are doing their part in helping to maintain the efficiency of their first love—the fire department—no matter where they may be.

Sincerely,
FRANK L. WILGUS,
Ocean Grove, N. J.

Plaque Honors Deceased Firemen

The Barre, Vt., Firemen's Club placed a plaque on the front of the fire station on Memorial Day in memory of the deceased members of the Barre Fire Department. The plaque is of Barre granite and was placed in a panel between the doors of the station. It was designed by an honorary member of the Club. The Maltese cross thereon is decorated with laurel as a note of the past services of the deceased men.



Members of the Rossford Volunteer Fire Department

In the driver's seat is Engineer Ralph Hahn. Left to right are Glen Dorn, Captain William Sevenish, Assistant Chief Peter Luyet, Chief George Miller, Lieutenant and Secretary William Fitzgerald, Irving Richards, Engineer Roy Steward, William Gory, Stephen Vancena, Lawrence Womar, Eugene Heineman and Henry Klena. The truck is a twelve-cylinder American-LaFrance quad.

Calculating Engine Pressures

To the Editor:

Please give me the solution to the following problems:

1. Two 600-foot lines of 2½-inch hose are stretched to a ladder truck from which a line of 2½-inch hose is carried up a 65 foot ladder. The line is equipped with a 1½-inch tip. Nozzle pressure is 50 pounds. What is the pressure required to supply the line?

2. A 500-foot line of 2½-inch hose is stretched from a hydrant and branched into two 100-foot lines of 2½-inch hose each equipped with ¾-inch nozzles. Nozzle pressure is 50 pounds. What is the pump pressure required to produce these nozzle pressures?

A. B.

Answer: The solution to Problem 1 is as foliows:

First, we'll assume that two lengths of 2½-inch hose are needed on the aerial ladder; we will also assume that the maximum height of nozzle, 65 feet, is the elevation of the nozzle when the ladder is in position. While this might give a small error, it will be on the side of safety, as the elevation of the nozzle would be less as the angle of elevation of the ladder is decreased.

First reduce the parallel lines of 2½ inch hose to a single line. This is done by dividing by the factor 3.6.

$600 \div 3.5 = 166.67$ feet.

Add to this the two sections of hose used on the ladder and we will have 266.67 feet of 2½-inch hose.

Now solve the problem as if the line were stretched horizontally:

$E.P. = N.P. \times (1.1 + KL)$
$= 50 \times (1.1 + .505 \times 5.333)$

In the above, K for 2½-inch hose and 1½-inch nozzle is .505.

L, the number of 50-foot lengths of hose in the line, is 5.3333.

Then $E.P. = 50 \times (1.1 + 2.693)$
$50 \times 3.793 = 189.65$ pounds

To this engine pressure must be added sufficient pressure to overcome the back pressure in the elevated line of hose.

Back Pressure $= 65 \times .434 = 28.21$ pounds.

Then the corrected engine pressure is $189.65 + 28.21 = 217.86$ pounds.

Answer 2: In solving this problem, we first combine the two parallel 2½-inch lines of hose into a single line.

Two parallel 100-foot lines of 2½-inch hose $= 200 \div 3.6 = 27.78$ feet of 2½-inch hose single line.

Then the total layout of hose $= 500 + 27.78 = 527.78$ feet.

Next combine the two nozzles:

$.75 \times .75 = .5625$
$.75 \times .75 = .5625$
$.5625 + .5625 = 1.125$
$\sqrt{1.125} = 1.06$.

This is the actual diameter of a nozzle equal in area to the two ¾-inch nozzles.

The nearest standard size nozzle to a nozzle 1.06 inches in diameter is a 1-inch nozzle.

Therefore we shall assume that the two nozzles combined are equal to a 1-inch nozzle.

$E.P. = 50 \times (1.1 + KL)$
$= 50 \times 1.1 + .105 \times 10.5556)$
$= 50 \times (1.1 + 1.108)$
$= 50 \times 2.208 = 110.4$ pounds.

Siamesed Layout

To the Editor:

Question No. 1: In the April issue of FIRE ENGINEERING you mention a problem in which there is a siamese layout from two pumpers, one with 1,500 feet of 3-inch hose and two with 1,500 feet of 2½-inch hose, to 100 feet of 2½-inch hose on which is attached a 1⅜-inch tip with 67 pounds nozzle pressure.

According to the method mentioned in the solution, I worked out the problem to 215 pounds engine pressure on Engine No. 1. In proving this problem you get a nozzle pressure of 68.66. While this error is slight, would it not be easier and less complicated to work problems of this type by converting the whole layout into a single line of 2½-inch hose and use the formula $E.P. = N.P. \times 1.1 + KL$, then double the answer and subtract the given engine pressure leaving you with the wanted engine pressure? This way gives you less margin of error and is simpler.

Example: Using problem above:

Combined $E.P. = N.P. \times (1.1 + KL)$, or $E.P. = 67 \times (1.1 + .341 \times 7.77)$ (7.77 is the siamesed lines plus the 100 feet of 2½-inch hose converted into one 2½-inch line and then converted into 50-foot sections).

Worked out: $E.P. = 67 \times 3.75$ (approx.) or 251.25. This is the combined engine pressure of both engines.

To find engine pressure on engine No. 1, double the combined engine pressure which will be 502.5 and subtract the known engine pressure of engine No. 2 which is 300 pounds, and you will get an engine pressure of 202.5 for engine No. 1. This answer will prove to be only a fraction of a pound off.

Question 2. Will acetylene explode in its pure state?

Question 3. At sea level the air is about 21 per cent oxygen. We know that altitude will cause a decrease in the atmospheric pressure, but will the percentage of the oxygen change? If so, will you give me the various percentages for various altitudes up to 10,000 feet.

W. B. D.

Answer: The suggestion you offer for solving the problem appearing in the April issue of FIRE ENGINEERING would work fairly well where the two engine pressures and the lines of hose they supply are fairly close in value. However, if the line of hose supplied by Engine No. 2 were much longer, then the error that would be introduced by your method of solution would be quite serious.

The solution we give can be applied to any problem of this type with fairly satisfactory results.

With regard to acetylene exploding in its pure state, there have been a number of explosions when gas has been stored in containers above 15 pounds per square inch pressure, particularly where a cylinder has been dropped.

As to whether or not it is the acetylene which explodes, or some foreign matter, it cannot be definitely said. It may be similar to the experience with ammonia where ammonia was for years considered non-combustible and non-explosive. Yet on several occasions explosions occurred in connection with refrigerating machines using ammonia so that now the theory is that ammonia, under certain and limited conditions, is explosive.

This much can be said, however, that acetylene is explosive in the form in which it is commonly produced, provided it is stored under fairly high pressure in cylinders.

With regard to the percentage of oxygen in the atmosphere at different elevations, this percentage remains practically constant. Although the quantity of oxygen and the quantity of nitrogen per cubic foot will decrease as the air becomes rarified, they stay in approximately the same proportion to each other.

As far as the various percentages of oxygen for altitudes are concerned, we would suggest that you refer to a copy of "Kent's Mechanical Engineer's Pocket Book" for this data. The quantity of oxygen and nitrogen depends upon the pressure rather than upon the altitude. If, for example, at 5,000 feet altiude we have in one place a higher barometric pressure than in another, you would have a larger amount of oxygen and nitrogen per cubic foot at the higher barometric pressure.

Booster Tank Layout

To the Editor:

Would you kindly give the following information in regard to a booster tank hook-up to a 750-gallon rotary pump.

The booster tank is of 50-gallon capacity and has a feed line six feet long and of 1⅛ inches diameter, making the connection from the bottom of the tank to suction of pump. The discharge line from the pump is 1-inch chemical hose 150 feet long and equipped with a ¼-inch tip.

In the above layout it is necessary to have one valve on each line. What is the proper size suction line to the pump?

Is it correct that the 1⅛-inch suction line connected to the pump will supply the pump with 34.15 gallons per minute with a head pressure of 1.302 pounds per square inch? (Head pressure 3 feet above pump.)

Which size line is preferable and why, 1½, 1¼ or 1⅛-inch?

Will the pump pull the added amount to supply the discharge line?

T. P.

Answer: A ⅛-inch suction line, six feet long, connected from tank to pumper would supply 34.15 gallons per minute, but not unless the engine was able to develop a little negative pressure. or vacuum, on the intake side. A 1¼-inch suction line would require about 1.34 pounds static pressure to force 34.15 gallons through it, taking into account no valves nor fittings.

A 1⅛-inch line would require somewhat more than this, but if one or two pounds of vacuum were developed by the pump, 34.15 gallons per minute could be handled very readily through the six-foot suction line.

While 34.15 gallons is quite a flow to expect from a 50-gallon booster tank, particularly in view of the fact that a ¼-inch tip at 50 pounds nozzle pressure discharges only 13.1 gallons per minute, still, if it was necessary to draw this amount of water from the tank, we would recommend a 1¼-inch suction line rather than a 1⅛-inch. A 1½-inch would be even better.

Our inquiring reporter overhauls the firemanic news of the day

Hot Off the Tape

Westchester County has a Brand new incorporated fire department, Vista Fire Company Inc.; The Chief is Milton Fitch. . . . In Wellington (Kan.) a fire starting in a shoe store short-circuited wires and flashed lights in the local telephone office turning in its own alarm. . . . One of the best of the fire association bulletins that has come our way is that published by the Del-Mar-Va Volunteer Firemen's Association, George Mayer, Jr., Secy. It has furnished this column with numerous items. Please continue to send it along, Brothers! . . . We shed a tear for Heinie, Dachshund puppy who aroused five members of the Ritter family in Denver (Col.) in time to enable them to escape from a fire, but lost his own life in the effort. . . . Columbus, (O.) has closed up four fire houses, it's said, as an "economy measure." Now's a fine time to do it! . . . Yonkers (N. Y.) which was forced to "curtail" and put several companies out of service has seen fit (following earnest protestations of Chief Edward Siller) to place its Rescue Company back in service. . . . *By the way—did we tell you those mobile kitchens donated by American firemen and their friends to British firemen are in action? Well they are, and we understand they are much appreciated.* . . . In Lennox (Cal.) Clyde Ness reported to police that someone saturated the coat of his 8-year-old terrier, Happy, with gasoline and set it afire. . . . The terrified twittering of a pet canary saved eight lives by warning occupants of a fire in a hotel in Melbourne (Victoria). . . . There's one born every minute!—in Grand Island (Neb.), John McHugh built a fire under his car "to warm up the motor." Firemen arrived in time to save part of the garage but car was total loss. (Thanks —Johnny Weisberger). . . . Did you know that at one time it was reported (Orange, N. J. papers) that Baltimore firemen were going to wear large numbers on their rubber coats, *a la* football players? Well it's true—says contrib' Otis Smith, who also tells us the idea was believed too spectacular by Chief Travers of Baltimore—and so was dropped. . . . Are they still fining owners of buildings in Boston (Mass.) where a chimney fire occurs the sum of $5.00 per fire for the services of firemen? They did in '40. . . . To our inquiring reader, J. T.—yes Sanford Goldberg who rated Champ' of the Metropolitan A. A. U. 1000 yard, is a regular New York City fireman. . . . According to one of our New England contrib's, the first permanent Chief for the City of Bath (Me.) since 1894 is Richard Frates—elected to that position by the City Council, couple of years ago. . . . In Galice (Ore.) Mrs. Fred Hansen and Mrs. Fred Leipold took no chances on excessive water damage. Finding the roof of their home ablaze they doused it *with teacups of water*. That's the way the new item read. All we can stay is: Chief of the Galice F.D. you better sign these gals up, they're good! . . . A $1,750 garage fire in Farmington (N. Y.) cost 6000 lives. The dead were white Swiss mice that were being raised for hospital experimental purposes.

* * *

Humanitarian Scientists

According to Chief Selden R. Alden of Brookline (Mass.)—and the United States generally, firemen rate a new name. He calls 'em *"Humanitarian Scientists."* Sezze—in these times the fireman has become more than a "water thrower"—but a real saver of lives, working in drownings, accidents and in certain illnesses.

Thanks, Joe Walker, for the news; nice designation alright, but we kind'a doubt it will ever become the accepted "theme song" of the Brothers.

* * *

Department of Red Faces

Upon numerous occasions we've recounted stories of how the good Brothers have, so to speak, been caught "with their pants down"—or off—when the "gong hit." And now comes still another yarn—this 'un from a far-Western contrib', which is all about fireman Ed. Lawrence of the Portland (Ore.) F.D. whose face got very red—and not from the heat of the fire either.

Seems that when the alarm hit in, Brother Lawrence made a wild dive for his turnout (the wayward reporter called it "boots and pants") and unfortunately, in his haste, kicked 'em under the bed. Madly he groped for 'em while below decks the motors on the apparatus roared into action. There was only one thing to do—and he did it. *At the fire it was not the heat that gave fireman Lawrence that red face!*

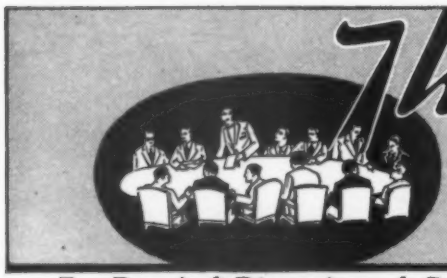
* * *

Firemen the "Butt" of the Joke?

Out Los Angeles (Cal.) way Kris Krivopseh, 50, has come to believe goats are a decided handicap, in case of fire. Not a few of the L.A.F.D. Brothers are inclined to agree with him. Yessir!

When fire started in his home, Krivopseh was late in detecting the odor of smoke—goats being what they are (no kidding). Worse yet, when Kris finally got his olfactory organs

(*Continued on page* 542)



The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

RESPONDING TO OUT-OF-TOWN CALLS

THE discussion in this round table is a continuation of that which appeared in the July issue of FIRE ENGINEERING.

The generous response from our readers made it necessary to carry the discussion over into this month's issue.

Readers are invited to send in their comments on this subject or on next month's topic, which appears in the box on the following page. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York, N. Y.

HERE IS THE PROBLEM

Do you charge for out-of-town runs by your department?

If so, what is your schedule of charges?

Is any insurance provided for the men leaving the city to operate on out-of-town fires?

If so, how much protection per man?

If no insurance is provided, who pays hospital costs, etc., of men injured while out of town on fire department duty?

Discussion of the Topic

Grover Frock, Chief, Springfield, Ohio: We do make runs out of the city when the person making the call has a contract with the city.

We have a city ordinance which provides for a charge of $100.00 for the first hour or part thereof and $75.00 per hour thereafter. A person wishing out-of-town service must contract with the City Manager and provide an insurance policy for at least $250.00 for fire service and a liability policy of $50,000.00 to protect the city from any damage or loss of property and to provide for injury or death of a member of the department. We have at present about fifty such contracts.

Our men are all protected by the workmen's compensation law.

F. A. Taylor, Chief, Colorado Springs, Colo.: We make out-of-town runs to the suburban areas around the city, provided we have no emergency on within the city limits. The charge for this service is $50.00 per hour or portion of an hour, with the exception that when the fire is out on arrival of the department and the department returns to quarters within thirty minutes, the charge is only $25.00.

No insurance is carried on the men other than our regular compensation insurance. Injured men are treated the same as if they were on duty within the city.

William J. Cawker, Chief, Topeka, Kan.: We do make a charge for fighting fires outside the city limits, that charge being $100.00 for the call which covers fire-fighting service up to one hour, and an additional charge of $1.00 per minute for each minute over the first hour.

We do not provide any special form of insurance for men who respond to alarms outside of the city as these men are protected by the Firemen's Relief Association and pension rights by state law when a contract is entered into between the city and a township, individual or group of individuals in the manner in which the statute requires. We do not give service unless such contract is in effect. However, we do carry liability on fire trucks which are sent outside of the corporate limits.

Hospital and medical costs for men injured when working on out-of-town fires are taken care of out of the Firemen's Relief Association funds.

W. R. McDonald, Chief, Petrolia, Ont.: We have in the past answered out-of-town calls on request. We have never made any charge, leaving it to the generosity of those concerned. We have never received more than a $25.00 donation, even though we have worked as long as five hours at a fire. We made one call to property outside the limits of the city, the owner of which property stated that he would pay for the services of the department. At the request of the mayor we went. We presented the owner with a bill for $75.00 for four hours' work during which time we laid 1,000 feet of hose in cold, stormy weather. They paid us off with a check for $30.00, saying we could not charge because we were a volunteer company. Our men and truck are insured, but we have found out that neither the men nor the apparatus are insured if we go outside the limits of our municipality. The men and the municipality would have to take the risk if we went out of town.

The Council has now passed a by-law to the effect that the department must not leave the municipality. Of course, this would not include a neighboring community which has its own department and which might need extra help in a serious fire.

Herbert Stutz, Chief, Pitsburg, Ohio: Our village has an ordinance which specifies that we charge $50.00 for the run, one dollar per hour for the men and $5.00 per tank of chemical. Some rural people have objected to our charges on the ground that they think they are too high. If you figure the cost of the truck, 1,000 feet of hose and other equipment, we would not break even.

Our village carries industrial insurance which covers our injuries in or out of the village while on duty. The Ohio State Volunteer Firemen's Association has brought such pressure on the Industrial Commission that they have amended their rules to take care of firemen while on duty outside of the village. We have to be on duty for the village, however.

G. A. Powers, Chief, Newport News, Va.: The City Manager must authorize our leaving the city. The county agrees to pay the cost incurred, but this includes only the cost of damage to apparatus or injury to the men. Unless there is some damage to the apparatus or injury to the men, there is no charge.

Zephrin F. Drouin, Chief, Lewiston, Me.: We charge for out-of-town runs only in towns where reciprocal agreements do not exist. Then the charge is $10.00 per mile for each truck and fifty cents per hour for each man.

We take care of hospital costs and salaries of men injured while in line of duty.

Paul Lefke, Chief, Lansing, Mich.: We charge $50.00 per piece of apparatus for the first hour and $5.00 for each six minutes or fraction thereafter.

The city provides the men leaving it to operate on an out-of-town fire with insurance of $5,000.00 plus pension.

L. B. Barnum, Chief, Phoenix, Ariz.:

We charge $75.00 for the first hour and $50.00 for each hour thereafter, for each piece of apparatus.

Insurance is provided by the Arizona Industrial Compensation which allows sixty-five per cent of a man's salary if he is injured.

Harry Hutton, Chief, Salem, Ore.: If a call is received from an area five miles or less outside the city limits, we charge $25.00 a call if the fire is out when we arrive, and $50.00 per hour and $25.00 for each additional hour if we work at the fire. We do not go beyond a limit of five miles.

The men are covered by state compensation.

Mack S. Darnaby, Acting Chief, Burbank, Cal: There are no charges for out-of-town calls.

By a recent program of mutual aid, all men on these calls are covered by state compensation, in the same manner as they are in the city.

C. M. Johnson, Chief, Knoxville, Tenn.: We charge $300.00 for each call or trip outside the corporate limits of the city.

We are forbidden by ordinance from sending men or equipment to any point more than five miles distant from the corporate limits of the city. We can, however, render aid to buildings situated in Knox County which are owned and maintained by Knox County, the State of Tennessee, or the Federal Government. In cases of extreme emergency we may render aid to any municipal corporation having local fire fighting equipment which is located within a reasonable distance from the City of Knoxville.

We do not answer calls to any points outside the corporate limits of the city unless the payment of the required fee has been secured or guaranteed by the owner of the property involved.

Members of the department answering calls outside the city are protected under provisions of our pension law. If a member receives a temporary injury in line of duty, whether inside or outside of the city, he receives full pay until he is able to return to duty. If his injury is permanent, he is retired on half pay.

The city takes care of all hospital and doctor bills of members of the department injured in line of duty.

Earl A. Traeger, Chief, Minneapolis, Minn.: We have an ordinance in effect which provides for the following charges for fire protection:

"The applicant shall pay an annual minimum charge of $3.00 for each $10,000.00 or fraction thereof, of assessed valuation of real and personal property for which the fire protection is to be furnished, including the real estate upon which the buildings and personal property are located, said assessed valuation to be determined by the latest figures shown on the books of the County Auditor. If the annual payments based upon assessed valuations shall be less than the following minimum charges, then the applicant shall pay in lieu thereof minimum charges as follows:

"In case the applicant is an individual, or church, he or it shall pay annually a minimum charge of $12.00.

"In case the applicant is a village or other governmental subdivision it shall pay an annual minimum charge of $100.00.

HERE IS THE PROBLEM FOR THE NEXT ISSUE

Now that sirens are being used for air raid alarms, do you permit the use of fire apparatus sirens in answering fire alarms?

If not, what warning signals (bells, whistles, etc.) are used?

Do you feel the alternate signals are satisfactory?

If not, how, in your opinion, could the problem be best solved?

"In case the applicant is a partnership, association or private corporation, except a church, it or they shall pay a minimum annual charge of $50.00.

"Association as used in the preceding paragraph shall not be construed as including groups of individuals who are associated together solely for the purpose of fire protection. Such individuals shall each pay the annual minimum charge of $12.00; but in the discretion of the Chief Engineer of the Fire Department such individuals may jointly enter into a contract and furnish a joint bond. In such case the penalty of the bond shall be in such amount as the Chief Engineer of the Fire Department, with the approval of the Fire Committee of the City Council shall determine will furnish adequate protection to the city.

"These annual charges shall be paid irrespective of whether the applicant during the year requires or requests the services of the equipment and personnel of the Fire Department. Such charges shall be in addition to the charges for equipment and personnel actually used for fire protection for the applicant, said charges for equipment and personnel to be in accordance with the following schedule:

"LABOR RATES

	Per hour
Chief Engineer	$1.95
Deputy Chief Engineer	1.50
Assistant Chief Engineer	1.20
Captain	1.00
All other firemen	.90
"Repair Shop and Service Labor	
Master Mechanic	2.30
Assistant Master Mechanics, each	1.95
All other mechanics, each	1.75

EQUIPMENT

Pumper, $75 for the first hour or fraction thereof, and $45 for each additional hour.

Quadruple apparatus, $75 for the first hour or fraction thereof, and $45 for each additional hour.

Booster Pump, $65 for the first hour or fraction thereof, and $45 for each additional hour.

Ladder Truck, $65 for the first hour or fraction thereof, and $45 for each additional hour.

Rescue Squad, $75 for the first hour or fraction thereof, and $45 for each additional hour.

Hose Wagon, $65 for the first hour or fraction thereof, and $45 for each additional hour.

Smoke Extractor, $100 for the first hour or fraction thereof, and $75 for each additional hour.

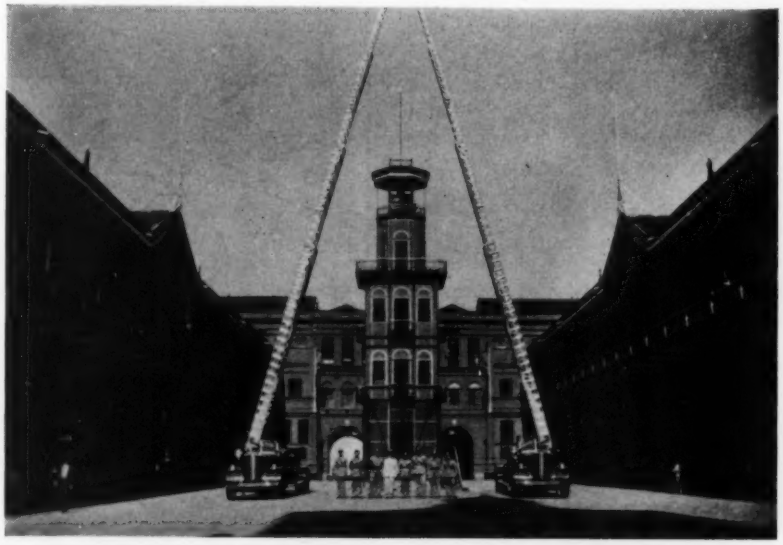
Foamite, $100 for the first hour or fraction thereof, and $75 for each additional hour.

Water Tower, $100 for the first hour or fraction thereof, and $75 for each additional hour.

Turret Nozzle, $100 for the first hour or fraction thereof, and $75 for each additional hour.

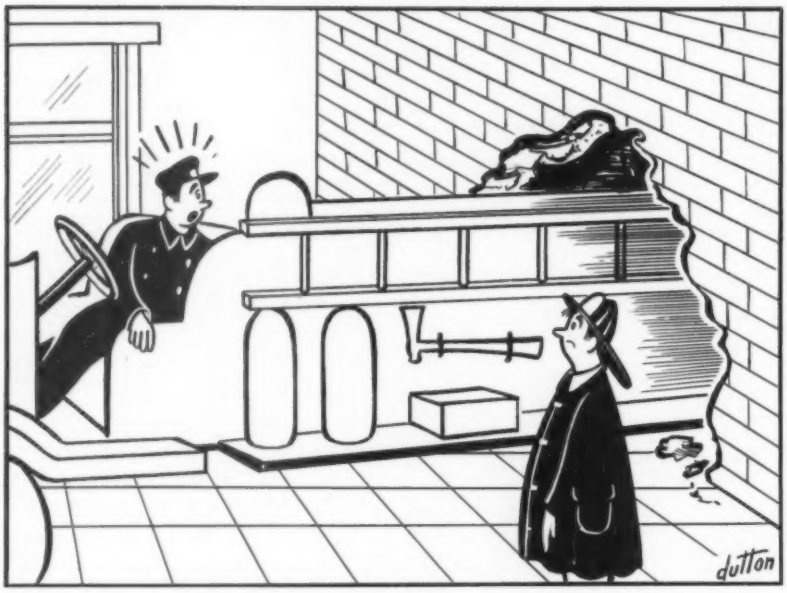
Evenrude Syphon..... $1.50 per hour

(*Continued on page* 543)



Pirsch Ladders Delivered to Rio de Janeiro

These two 85-foot aluminum alloy aerial ladders, recently delivered to Rio de Janeiro, Brazil, are raised in front of the General Fire Headquarters, housing 900 firemen and their apparatus and equipment.



"See What I Mean . . . The Brakes Don't Grip Right!"

Out in North Dakota

A Fargo editor says that a man out west got himself into trouble by marrying two wives.

A Dickinson editor replied by assuring his contemporary that a good many men in that section have done the same thing by marrying only one.

A Minot editor reports that quite a number of his acquaintances found trouble by merely promising to marry, without going any further.

Let Ransom Rustle

Risking the perils of death, the valiant knight had rescued the fair maiden and, now, he was holding her in his arms.

"Listen, big boy!" she said, "you're not holding me for ransom, are you?"

"Not me!" replied the knight. "Let Ransom get his own women."

To the Point

Sandy was not one for many words, but his desperation had grown each night as he sat unable to tell the bonny lass of his strictly honorable intentions.

"Ye will recall I wa' sitting here last Sabbath? And do you mind me being in this same spot Monday nicht? Aye and Tuesday nicht, and Friday nicht?"

"Aye, that's so, Sandy."

"Weel, lass, this is Saturday nicht and here I am again. Now, come Maggie, tell me, don't ye begin to smell a rat?"

Off Course

The fog was very thick, and the Chief Officer of the tramp steamer was peering over the side of the bridge. Suddenly, to his intense surprise, he saw a man leaning over a rail, only a few yards away.

"You confounded fool!" he roared. "Where the devil do you think your ship's going? Don't you know I've the right of way?"

Out of the gloom came a sardonic voice.

"This ain't no blinkin' ship, guvnor. This 'ere's a light'ouse!"

Complete

Mr. Bronson died very suddenly and an important business letter was left unmailed.

Before sending it off, his secretary, who had a passion for explanatory detail, added the following postscript below Mr. Bronson's signature:

"Since writing the above I have died."

A Classic

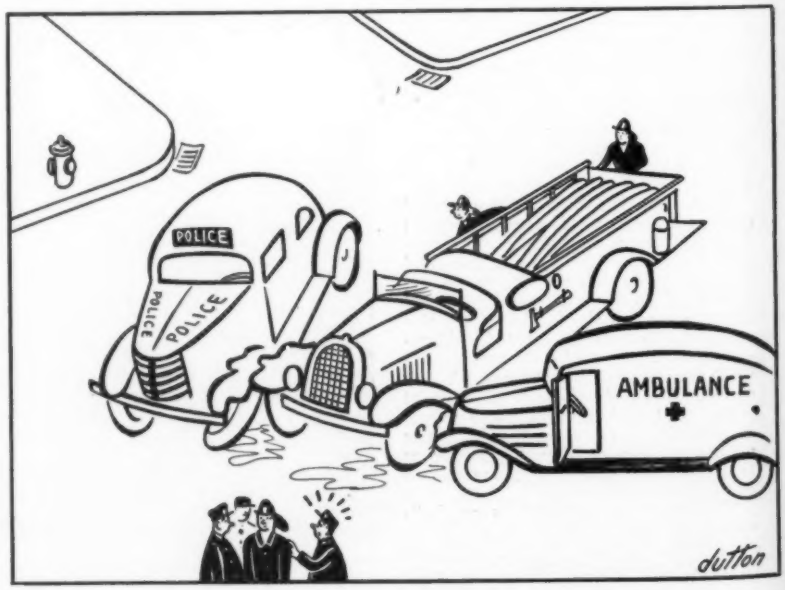
We believe that story about Dr. Angell of Yale will become a classic. In case you are behind in your college anecdotes we'll repeat it. Dr. Angel went to Columbus to deliver an address, but couldn't decide on a subject. Walking up the chapel steps he quite suddenly saw a sign on the door—PUSH.

That would be his topic! He would speak upon the value of aggressiveness in life, of gentle force in the world. Upon the platform he began to speak: "The text for my speech is not drawn from the Bible, or from any great philosopher, rather from a sign on the chapel door—it names the chief asset that a person may have."

His entire audience twisted their heads and saw inscribed on the chapel door the word—PULL.

A colored lady was asked if she had ever been X-rayed.

"No, sir," she replied. "But I has been ultra-violated."



"Well, Boys . . . It Looks Like We've Given the Insurance Companies a Puzzle to Unravel!"

TO EXECUTIVES:

NOW YOU CAN HELP

Even more...

New Treasury Ruling Permits Purchases UP TO $100,000, in any Calendar Year, of Series F and G WAR BONDS!

The Treasury's decision to increase the limitations on the F and G Bonds resulted from numerous requests by purchasers who asked the opportunity to put more money into the war program.

This is not a new Bond issue and not a new series of War Bonds. Thousands of individuals, corporations, labor unions, and other organizations have this year already purchased $50,000 of Series F and G Bonds, the old limit. Under the new regulations, however, these Bond holders will be permitted to make additional purchases of $50,000 in the remaining months of the year. The new limitation on holdings of $100,000 in any one calendar year in either Series F or G, or in both series combined, is on the cost price, not on the maturity value.

Series F and G Bonds are intended primarily for larger investors and may be registered in the names of fiduciaries, corporations, labor unions and other groups, as well as in the names of individuals.

The Series F Bond is a 12-year appreciation Bond, issued on a discount basis at 74 percent of maturity value. If held to maturity, 12 years from the date of issue, the Bond draws interest equivalent to 2.53 percent a year; computed on the purchase price, compounded semiannually.

The Series G Bond is a 12-year current income Bond issued at par, and draws interest of 2.5 percent a year, paid semiannually by Treasury check.

Don't delay—your "fighting dollars" are needed *now*. Your bank or post office has full details.

EVERYBODY EVERY PAYDAY AT LEAST 10%

Save With . . .

War Savings Bonds

This space is a contribution to America's All-Out War Program by **FIRE ENGINEERING**

TRADE MARK
GAMEWELL
REG. U.S. PAT. OFF.

Manufacturers of

EMERGENCY SIGNALING SYSTEMS

- Fire Alarm
- Police Signaling
- Air Raid Warning
- Industrial Fire Alarm
- Fire and Watchmen's Supervisory
- Automatic Fire Detection

Two thousand municipalities, several thousand industrial plants and many of the largest institutions now use Gamewell Systems for the protection of life and property and to ensure the permanency of established business.

We freely cooperate in planning protective Signaling Systems.

THE GAMEWELL COMPANY

Specialists in Public Safety

NEWTON UPPER FALLS MASSACHUSETTS

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the FACTS.

EDDY VALVE CO., Waterford, N.Y.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of July, 1942. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending July 31	Loss in Thousands Dollars
Quebec, Que.—The Quebec Arena destroyed	80
Nassau, Bahamas, B. W. I.—Entire city block containing the Hotel Charlote, the Bahamas Red Cross Center, four dwellings, a pharmacy, a grocery and seven dry goods shops	850
Anyox, B. C.—Thirty-two homes destroyed by forest fire	180
Elverta, Cal.—Elverta Poultry Farm, including six bldgs. and stock	125
Bloomington, Ind.—Harris Grand Theatre damaged	65
Harlan, Ky.—Gulf Distributing & Refinery Co. plant and Standard Oil refinery damaged	425
Detroit, Mich.—Currier Lumber Co. plant, stock of lumber, asphalt shingles and sixty electrical refrigerators destroyed	180
Taft, Cal.—Three warehouses of Standard Oil Co. destroyed	80
Corvallis, Ore.—Fisher Flour Mill, two freight cars, destroyed	170
Marietta, Okla.—Entire north side of Main St., including several blocks damaged	170
Plymouth, Pa.—Clark Lumber & Supply Co's mill, steam plants, garage and lumber shed destroyed	50
Edmonton, Alta.—Fruit warehouse destroyed	150
Gridley, Cal.—Gridley Union School destroyed	170
Olean, N. Y.—North End grade school destroyed	50
Maud, Okla.—Cafe, beauty shop, drug store and pool hall on Main St. and pump company bldg. on nearby alley destroyed	50
Olympia, Wash.—Twenty forest fires started by lightning	80
Bellingham, Wash.—Royal Canadian bomber taking off at airport exploded	250
Lowell, Mass.—Greenwood block in shopping district destroyed	100
Nelson, B. C.—Kootenay Hotel destroyed and Klondike Hotel damaged	80
Stuttgart, Ark.—Twenty-two cars of St. Louis Southwestern mixed freight and oil train destroyed	50
Pocatello, Ida.—Two bldgs., equip. and car destroyed	50
Fryeburg, Me.—Fryeburg Corp. lumber mill and outlying bldgs. destroyed	125
Detroit, Mich.—Lewis Artist Supply Co. destroyed, dancing academy, three bars, bowling alley, laundry, dry cleaning shop and five small stores damaged	170
Las Vegas, Nev.—Rancho Grande Creamery plant damaged	50
Las Vegas, Nev.—Las Vegas Transfer Co. warehouse and paint and varnish storeroom destroyed	50
Alliance, Ohio—Alliance Sanitary Laundry Co. plant destroyed	50
Redmond, Ore.—Dant & Russell Punderosa Pine Mill destroyed	150
Memphis, Tenn.—The Memphis Cotton Warehouse destroyed	50
Winchester, Va.—Genl. offices and shipping dept. of National Fruit Products Co. destroyed	50
Ladysmith, Wis.—Menasha Woodenware Co. mill destroyed and main factory damaged	50
Midland, Ont.—Two small naval craft and two large bldgs. destroyed at Midland Boat Works. Many small boats burned	425
Driggs, Ida.—Driggs Flouring Mill and Pea Harvesting warehouse destroyed	80
Mass City, Mich.—Six dwellings, twelve bars destroyed and grocery store damaged	50
Franklin, N. H.—Kenrick Block occupied by J. J. Newbarry Dept. store and professional offices and apts. destroyed	50
Kearny, N. J.—Theobold Industries, Inc., damaged	80
Oklahoma City, Okla.—Russell Products Co. damaged	50
Klamath Falls, Ore.—Pelican Bay Lumber Co. destroyed	170

CLASSIFIED ADVERTISING

Bids Wanted, For Sale and Help Wanted, $5 per inch. Position Wanted, $2.50 per inch.

WANTED

Jobbers to sell our Morning Pride Firecoat, with Wing Freedom Sleeves, Chest Protector, Face Protecting Collar, Waterproof-Wool Wristlets, No Dirt Pockets. Made from Protected Rubber Fabric. Write today. Morning Pride Mfg. Co., 1986 Home Ave., Dayton, Ohio.

FOR SALE

1916, Seagrave City Service Truck, 6 cyl. "F" Motor with the following equipment: 260 ft. Ground Ladders, 35 gal. Chemical Tank, 200 ft. Chemical Hose, 9 ft. Browder Life Net and Standard Truck Equipment. Truck may be inspected at Central Fire House, Greenwich. Proposals will be received until 2 P.M., W.T., Tuesday September 1st, by the Board of Selectmen, Town Hall, Greenwich, Conn.

FOR SALE

American LaFrance Type 91 Chemical engine with four 40 gallon tanks in perfect condition. All new rubber. Price $2,000.00. Bernardsville Fire Co., Bernardsville, N. J. Phone—Bernardsville 880.

Tuscaloosa, Ala.—Petroleum Carriers Corp. warehouse destroyed 200

Winnfield, La.—Dry kiln, planing machinery and house of Lovell Lumber Co. destroyed 50

Middletown, Ohio—Gordon Theatre destroyed 80

Indianapolis, Ind.—Main bldg. of the Ermet Products Co. 80

Baltimore, Md.—Western Automobile Supply Co. warehouse 750

Fremont, Neb.—Updike Grain Co. warehouse destroyed 90

Cincinnati, Ohio—Hodge Drive-It-Yourself Co. and nearly 100 nearby bldgs. damaged 170

Franklin, Ida.—Franklin Milling and Elevator Co. destroyed 50

Sparta, Ky.—Gilbert Walker store, ice plant, restaurant, oil service sta., skating rink and Louisville & Nashville R. R. depot destroyed 65

Cleveland, Ohio—Two-thirds of an east side indus. bldg., housing several shops producing war materials damaged..... 250

Okmulgee, Okla.—The Crocker Packing Co. plant destroyed 80

Richmond, Va.—East bldg. of Carter-Venable Co. destroyed..... 80

Bethlehem, Pa.—Plant of W. R. Goldsborough, Inc., silk-throwers destroyed.... 80

Bayfield, Wis.—John food store, four other bldgs. damaged 200

Haverhill, Mass.—Four ice houses of Merrimack Ice Co. destroyed..... 65

Cozad, Neb.—Alfalfa mill of Allied Mills, Inc., destroyed 50

North Conway, N. H.—Farm dwelling and barn destroyed 50

Alliance, Ohio—Master Feed & Seed Co. ice house and elevator shafts and hog slaughter rooms of Fairmount Provision Co. destroyed 50

Marshfield, Ore.—Dwelling of Roy G. Currier destroyed 65

Marysville, Calif.—Plant of Petroleum Products Co. destroyed..... 80

Lansing, Mich.—Main garage of C. & J. Commercial Driveaway Co. destroyed.... 50

Spokane, Wash.—Four-story bldg. destroyed 125

Lakeview, Ore.—Lakeview Lumber Co. destroyed 170

Port Alberni, B. C.—Old wing of Somass Hotel damaged 50

Kennewick, Wash.—Grange Supply, Inc., warehouse destroyed 50

Fox Lake, Wis.—Central Wis. Cannedies, Inc., plant destroyed, nearby Porter Lumber & Coal Co. yards damaged..... 80

Boston, Mass.—Three story brick bldg. occupied by Wholesome Film Co. destroyed with large quantity movie film..... 50

clear water never hurt anything- GET IN THE SWIM!!

INDIAN

FIRE PUMPS are fast displacing soda acid extinguishers

No costly, injurious chemicals

MORE and more fire departments are telling us of the many ways in which INDIAN FIRE PUMPS do the same jobs which used to require chemical extinguishers. Think of the economy—of the absence of damage to fabrics, furnishings, clothing. Clear water hurts nothing. NOW is the time to get some INDIANS and try them out to your fullest satisfaction — prove to yourself that everything we say about them is a fact. Or, if you already have these great fire fighters, check over your supply. Warm weather brings more fires. INDIAN FIRE PUMPS will handle 70% of your calls without laying a section of hose. Let us send latest descriptive circulars.

Regular firemen instruct a Volunteer Brigade in the use of ***INDIANS for Civilian Defense Work.*** *Put your trust in these back pack pumps for fighting all kinds of indoor and outside fires. Recommend them to industrial plants, public buildings and other institutions for whose fire protection you are responsible.*

INDIAN Fire Pumps

FIRST IN WAR—FIRST IN PEACE AND FIRST IN THE MIDST OF THE FIRE FIGHTING

WE CAN MAKE PROMPT SHIPMENT

D. B. SMITH & CO., 406 Main St., UTICA, N. Y.

PACIFIC COAST AGENTS:

Hercules Equipment & Rubber Co. 550 Third St., San Francisco, Cal.

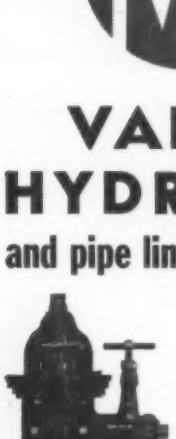
Coreo-Conwhit Sales Co. 520 S.W. Pine St., Portland, Ore.

The Conwhit Co. Klamath Falls, Ore.

Mill and Mine Supply, Inc. 2700 4th Ave. S., Seattle, Wash.

Roy G. Davis Company 617 E. 3rd St., Los Angeles, Cal.

WAR TIMES
INCREASE
Fire Hazards
INSTALL
VALVES
HYDRANTS
and pipe line accessories



A. W. W. A.
HYDRANTS
Underwriters
Approved

Conform to American Water Works Association specifications. Approved and listed by Underwriters' Laboratories and Associated Factory Mutuals. Well known and widely used for many years.

Emergency fire fighting facilities may be often improved by installing more valves and hydrants than normal, also keeping larger stock of extras for emergency. M & H products are well known for high quality and expert workmanship, have been widely used for many years.

VALVES: A. W. W. A. type, iron body, bronze mounted with double-disc parallel seat or solid wedge type. Non-rising stem, outsides crew and yoke; or with sliding stem and lever. Also furnished hydraulically operated. Square Bottom type operates in any position. All are rugged and dependable, made of best material with highest quality workmanship.

M&H VALVE
AND FITTINGS COMPANY
ANNISTON, ALABAMA

Conference on Fire Protection Engineering Held

Because of the urgent need for education regarding fire protection, the Department of Building Engineering and Construction and the School of Architecture of the Massachusetts Institute of Technology in cooperation with the National Fire Protection Association sponsored a Summer Conference on Fire Protection Engineering at M. I. T. on June 22-24. The conference was open to secondary-school teachers, industrial and consulting engineers, architects, buildings officials, fire chiefs and civilian defense officials.

The topics discussed and their leaders are as follows: "Importance of Fire Protection and the War" by Dr. Karl T. Compton, President, M. I. T.; "Fire Losses in the Home" by Mr. Horatio Bond, Chief Engineer, National Fire Protection Association; "Fire Losses in Business" by Professor Erwin H. Schell, Head of the Department of Business and Engineering Administration, M. I. T.; "Principles of Fire Insurance" by Mr. James F. Crafts, Manager, Eastern Department, Firemen's Fund Insurance Company; "Occupancy Fire Hazards" by Professor Edward R. Schwarz, Department of Mechanical Engineering, M. I. T.; "The Chemistry of Fire" by Professor Arthur R. Davis, Department of Chemistry, M. I. T.; "Common Fire Hazards" by Mr. Harvey C. Abbott, Engineer, New England Fire Insurance Rating Association; "Homes and Business Buildings" by Professor Walter C. Voss, Head of the Department of Building Engineering and Construction, M. I. T.; "Exits, Fire Walls and Construction Details" by Professor Howard R. Staley, Department of Building Engineering and Construction, M. I. T.; "City Planning and Zoning" by Professor Frederick J. Adams, Head of the Course in City Planning and Housing, School of Architecture, M. I. T.; "Political Obstacles in Legislation" by Professor Walter R. MacCornack, Dean of Architecture, M. I. T.; "Public Fire Departments" by Chief Samuel J. Pope, Boston Fire Department; "Water Supplies" by Professor Thomas R. Camp, Department of Civil and Sanitary Engineering, M. I. T.; "Private Fire Protection" by Mr. A. L. Brown, Chief Engineer, Associated Factory Mutual Fire Insurance Companies; "Hazardous Processes and Materials" by Mr. N. J. Thompson, Director, Faculty Mutual Laboratories; "Fire Protection Information" by Mr. Horatio Bond, Chief Engineer, National Fire Protection Association; and "Fire Prevention in Home and Business" by Mr. Robert S. Moulton, Technical Secretary, National Fire Protection Association.

Gas from First World War Fells Seventeen Persons

On July 7, Columbia University's College of Pharmacy at 119 West 68th Street, New York City, was having its house cleaning in an effort to help the salvage campaign.

While cleaning out the second floor storeroom of its accumulation, the workmen came across four gas tanks. All tanks were believed to have been empty, but to make sure Dean Charles W. Ballard ordered a checkup.

As the tanks were opened, three were found to be empty, while the fourth emitted a hissing sound and when the valve was turned, out spurted a yellowish green cloud.

Photo by Bill Herries

World War No. 1 Gas Tank Goes Haywire

Battalion Chief Patrick H. Clancy explains to Deputy Chief John S. Foxx and a reporter how the corroded valve of the tank refused to shut off leaking gas.

The pungent odor was recognized as chlorine gas. This tank was stored at the Pharmacy College in 1918, at which time the college laboratories were being used for chemical warfare research of World War No. 1.

Unable to close the valve of the loaded gas tank, Dean Ballard ordered it taken out of the building at once. When it was placed on the street, trouble began. Gas flowed from the tank at an increasing rate, and within a few minutes the Hudson River wind had blown the gas up the street in the direction of West 68th Street and Columbus Avenue. Within this boundary, bystanders and pedestrians began falling and reeling about on the sidewalk.

Soon to arrive were the police emergency squad, and with gas masks on, they went about their rescue work.

When ambulances arrived, the doctors and nurses found a sidewalk hospital set up, one block out of the danger zone. Seventeen persons were overcome with the gas while fifty others were reeling about holding on to the lamp posts and stanchions.

When Battalion Chief Patrick H. Clancy of the Ninth Battalion arrived on the scene, he said that it was a very good thing that the tank had been removed from the building, for if it had been left in there to empty, no fireman would have been able to enter the building except with a gas mask.

Among those treated on the scene for gas poisoning was Patrolman Harold Reidman. It was his first day as a rookie cop. He went to the aid of those overcome, until he fell himself.

During the excitement, 100 coast guardsmen learning to be pharmacists' mates at the college were told to leave the building. BILL HERRIES.

Soldiers Escape Fire

Twenty soldiers from Camp Stoneman, near San Francisco, narrowly escaped with their lives recently after they were trapped in a new outbreak of a fire which swept over brush, grain and peat lands near Mt. Diablo State Park.

Ringed in by flames when a shift in the wind caused the fire to flare up out of control, they battled their way to safety over a path of wet sacks.

The fire first broke out July 9 and burned over 3,000 acres before it was temporarily controlled that night. It started on a ranch owned by Millard Diffin in Briones Valley and spread to Deer Valley during the night, as Crockett, Pittsburg, Brentwood, Martinez, Concord and Walnut Creek, all in the East Bay section of Northern California, sent apparatus and volunteers to fight the blaze.

When the fire leaped out of control on Friday, the 10th, the soldiers, and prisoners from the Contra Costa County prison farm at Marsh Creek, aided the firemen.

It raged out of control for more than four hours on Friday and it was during that time that the soldiers were nearly trapped.

Seven ranches were burned over. Damage on one alone amounted to $4,000. More than 6,000 acres of valuable grain, barley and peat land were burned over.

The fire brought a call from the State Division of Forestry for redoubled caution or the part of the public. State Forester M. B. Pratt disclosed that the forest fires in California for the first six months of this year set a three-year record. He said that fires reported in California areas under supervision of State Forestry Division crews totaled 2,960 up to July 1. In the same period of 1941, there were 2,431 fires and 2,360 in 1940.

Acres of land under the department's supervision and hit by fire so far totaled 101,035. Including grain and farm lands, fires have denuded more than 232,000 acres through July 1, Waner L. Marsh, deputy director of the Department of Natural Resources said.

The Department at the same time announced that a stubborn blaze in Kern County, north of Kernville, which had been raging for several days had been brought under control after burning through some 15,000 acres of grass, brush and some timber.

Seventy convicts from San Quentin were sent to the Kern County blaze to augment fire fighters there. They were sent in two buses and were accompanied by three guards. Fifty other prisoners from the La Canada road camp in the Southern California area joined them after permission had been granted by Warden Clinton T. Duffy. All the men were on the prison's minimum security list with less than five years to serve and with records that evidenced that they could be trusted. Several of the men were San Quentin firemen and one from the La Canada road camp was an ex-fireman.

State fire-fighting authorities are hard pressed for manpower this year because

WAR CASUALTIES

You don't see any Homelite Sales Trucks driving up to your door these days. And for good reason. Homelite Sales Trucks have been junked, scrapped, thrown into the discards. And Homelite salesmen are now exclusively servicemen, whose job it is to help Homelite users keep their units going until our war production is completed and normal deliveries can be made.

For the Duration

Use your Homelite Portable Generator as much as possible, but use it wisely. Use it for floodlights on all night fires. Use it for power standby to operate signal systems in emergencies. Make it available for emergency lighting at hospitals, airports, and public buildings during power failures. Let it do its part in the civilian defense effort.

Send for these Books

Our service manuals will show you how to keep your Homelite Generators and Pumps in good condition. Send for copies. State in your letter the model and serial numbers of the Homelite units you now have.

Homelite Corporation

808 RIVERDALE AVE., PORT CHESTER, N. Y.

For

War Emergencies

the new military model

EMERSON RESUSCITATOR

Operates with or without oxygen!

Valuable in smoke suffocation, gas poisoning, electric and physical shock.

Automatic and foolproof. Used successfully by fire departments, auxiliary and defense organizations and the armed forces.

Let us demonstrate its place in your defense program.

J. H. EMERSON COMPANY

Cambridge, Mass.

Representatives in Principal Cities

of the war and the demand for workers to harvest the crops. Many crops fires are occurring because of carelessness of green workers who have never lived in a "tinder box" area before and don't realize how much harm a live cigarette butt can do.

How desperate the situation is, was shown by bringing in the convicts from San Quentin to Kern County, some 300 miles. Men who usually augmented the State Forestry Service's department in the summer have found regular employment, many of them as firemen employed at military establishments.

With the war, the military is reluctant to dispatch troops and the State Guard and State Militia are both busy guarding bridges, public utilities, waterfronts and plants pertinent to the war effort.

Added to that, the heavy rains of last winter have made for a luxuriant growth of vegetation which has increased the fire hazard greatly.

BOB GREENOCK

U. S. Chamber of Commerce Issues Warning on Waste Paper

The Chamber of Commerce of the United States recently called the attention of the public to the seriously increased fire hazards caused by large accumulations of waste paper.

The War Production Board has suspended for an indefinite period further collecting of paper waste in all but a few regions, where collections can be carried on economically, but, says the Chamber's Insurance Department, large surpluses are awaiting disposal in many communities. Several recent destructive fires in schools and churches are attributed to improper storage of paper.

"Fortunately," says the Chamber's statement, "the fire insurance industry, leading fire protection organizations, and many local fire departments have taken cognizance of these hazards, have issued timely warnings, or have taken steps to eliminate or correct the inherent danger of fires by making available the simple, necessary precautions for handling and storing waste paper and other combustible salvage materials awaiting intermediate or final disposal.

"Existing accumulations of combustible salvage materials should be made to meet prescribed common-sense rules of fire safety. Final disposal should be made, and, if and when the War Production Board renews its appeal for collections, steps should be taken to prevent the recurrence of the problem, but without discouraging in any way full cooperation with the 'Salvage for Victory' program."

Must Put a Stop to Carelessness

William Vlachos of Vlachos and Company, fire insurance inspectors, Philadelphia and New York, in the following letter to "The Journal of Commerce," outlines his views as to what is primarily and imperatively needed for protection against fire at this period when every energy is directed to defense work:

"At least seventy per cent of the fires in the United States are caused by utter carelessness. Ships are destroyed, planes are ruined, irreplaceable rubber is destroyed, cork bark is burned; all because the American people are naturally careless and reckless.

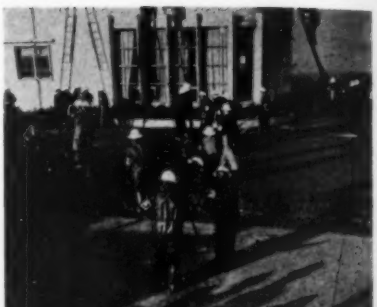
"Men use oxygen-acetylene torches without any precautions being taken, although everyone knows that white hot metal is literally sprayed about when oxygen-acetylene torches are used. Yards for storage of lumber, cork, second-hand tires, crated machinery, cased Army supplies, etc., are of enormous dimensions, resulting in uncontrollable fires. These yards are patrolled (if patrolled at all) by some old grandfather who, as actually happened in Philadelphia, falls dead on his kerosene lantern and sets the large lumber yard, he was presumably protecting, on fire.

"The first step to be taken is the segregation of war materials. Let all stock piles be small and good distances apart.

"The second step is the employing of alert men properly instructed in fire detection and fire extinguishment to guard continually all accumulations of vital materials.

"The third step is to insist that all storage yards are kept immaculately clean. Of course, this holds good for all insured properties.

"The fourth requirement is that all storage yards must be well fenced."



Air Raid Test for Civilian Defense Agencies

Civilian defense agencies at work during an air raid test held recently in San Francisco. Decontamination squad is at work in the foreground, first aid workers are administering to the victims on the lawn, and auxiliary firemen are swarming over Hospitality House (erected in the city's Civic Center for use by service men). About half the city was "bombed" in this recent demonstration and 150 incidents occurred, with all branches of civilian defense doing their stuff.

Illinois to Hold District Schools

John H. Craig, State Fire Marshal of Illinois, has announced that district schools for the advanced training of firemen will be held between now and September in eleven centers in the northern and north central portions of the state by the fire department instructors of the Division of Fire Prevention for the purpose of teaching firemen to become qualified instructors of auxiliary firemen associated with civilian defense.

Convention Dates

Aug. 18-19 — FIREMEN'S ASSOCIATION, STATE OF NEW YORK. Annual meeting. Syracuse, N. Y. Fred A. Davis, Fort Edward, N. Y.

Aug. 27-28—CONNECTICUT STATE FIREMEN'S ASSOCIATION, New Haven, Conn. Secretary, D. W. Harford, South Norwalk, Conn.

Aug. 31-Sept. 5—PENNSYLVANIA FIREMEN'S TRAINING CONFERENCE. Annual meeting. Pennsylvania State College, State College, Pa. Secretary, Charles E. Clark, Box 217, Wayne.

September—NEW HAMPSHIRE STATE FIREMEN'S ASSOCIATION. Annual meeting. Meeting place to be decided upon. Secretary, Aubrey G. Robinson, Manchester, N. H.

Sept. 8-11—WESTERN PENNSYLVANIA FIREMEN'S TRAINING INSTITUTE. Annual meeting. California State Teachers' College, California, Pa. Secretary, Joseph Huscroft, North Charleroi, Pa.

Sept. 15-16—IOWA FIREMEN'S ASSOCIATION. Annual meeting. Tipton, Ia. Secretary, H. C. Reinholdt, Manning, Ia.

Sept. 18-19—NEW JERSEY STATE FIREMEN'S ASSOCIATION. Annual meeting. Meeting place to be decided upon. Secretary, Evan F. Benners, Room 602, 24 Brandford Place, Newark, N. J.

Sept. 21-22—TEMISKAMING FIREMEN'S ASSOCIATION. Annual meeting. New Liskeard, Ont. Secretary, F. E. Thompson, Box 686, New Liskeard, Ont.

Sept. 21-24—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual meeting. Fresno, Cal. Secretary, Harry E. Strasser, 2046 Oregon Avenue, Long Beach, Cal.

Sept. 23-25—INDIANA STATE FIRE CHIEFS' STATE DEFENSE CONFERENCE. Evansville, Ind. Bus. Mgr., Frank L. Orr, P. O. Box 984, Indianapolis, Ind.

October — ARKANSAS STATE FIREMEN'S ASSOCIATION. Annual meeting. Fayetteville, Ark. Secretary, H. D. Compton, Central Fire Station, Little Rock, Ark.

Oct. 5-8—INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION, INC. 47th annual meeting. Atlantic City, N. J. Secretary, Irvin Shulsinger, 8 East 41st St., New York.

Oct. 6-8—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual meeting. Allentown, Pa. Secretary, Charles E. Clark, Wayne, Pa.

Oct. 13-15—ILLINOIS FIREMEN'S ASSOCIATION. 55th annual meeting. Jacksonville, Ill. Secretary, Chief Roy W. Alsip, Champaign.

New York Firemen To Watch for Violators of Gasoline Storage Law

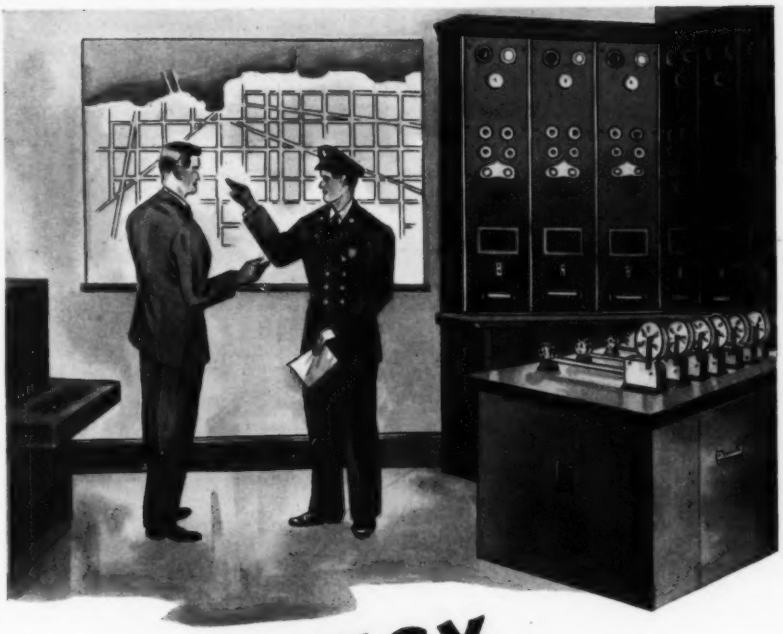
The attention of all members of the New York Fire Department has been directed by bulletin to the hazard created by the illicit transportation and storage of gasoline.

Building Inspectors are instructed to notify operators of all storage garages and oil selling stations that the dispensing of gasoline is restricted to delivery to the fuel tanks of motor vehicles, or to motor vehicles that have been licensed by the Fire Department to transport volatile inflammable oils.

Whenever gasoline is found in any premises in quantities exceeding one gallon without a permit, it is to be confiscated and removed to company quarters.

In all cases where confiscation is made, a summons duly executed will be issued to the person or organization responsible for such illegal storage.

If the quantities illegally stored do not permit of immediate confiscation, a call is to be made to company quarters for necessary assistance, upon receipt of which a call is to be made by telephone to the Division of Combustibles for the removal of the gasoline. The member discovering the violation must remain on the premises until such assistance for removal arrives.



STRATEGY
in Fire Protection

Today's conditions make it increasingly difficult for fire department authorities to deploy equipment for adequate protection against any emergency. Large units of men and machines are unwieldy—outlying war production plants, and the housing that accompanies them, extend the areas of necessary operation.

For many departments, the most satisfactory answer is the addition of one or more LaBour Fire Trailers. These small and relatively inexpensive units *supplement* standard-size equipment, save much wear and tear on the large apparatus, and make any department much more flexible.

One or two men constitute a complete company, yet can handle many alarms without assistance. Almost always such a unit can relieve bigger equipment so that it may return to its station much sooner, be ready for the next demand.

LaBour Fire Trailers cost only a fraction as much as "regulation" pumpers. Send for Bulletin 49 for complete information.

THE LABOUR COMPANY, Inc.
Elkhart, Indiana, U.S.A.

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

YES! Pacific Portable Pumpers are enlisted for this war. Military demands and priorities curtail vital materials. Our endeavor has always been to render the best in quality and service. Your understanding and consideration of our position in these trying times is greatly appreciated.

Fire Fighting Equipment Division

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, WASHINGTON

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆

"SAFETY FIRST— and ALWAYS"

In Case of Fire

What will your water lines deliver? Better find out before it's too late.

Static pressure may give a false sense of security. But—Dynamic pressure tells the real story.

Let us tell you the whys and wherefores about the—

Victor Hydro Static-Dynamic Pressure Test Pipe.

Made in the U. S. A. by

VICTOR INDUSTRIES

271 NEW YORK AVENUE, HUNTINGTON, N. Y.

"FIRE AND SAFETY" DIVISION

B O Y E R

HEADQUARTERS FOR FIRE APPARATUS and FIRE DEPARTMENT SUPPLIES

BOYER FIRE APPARATUS CO.

LOGANSPORT, IND.

B O Y E R

Deferment of Firemen

(*Continued from page* 512)

St. Paul, Minn.
William J. Sudeith, Chief

We have lost nine men so far because of the draft. We have not as yet requested deferment of our men.

Cincinnati, Ohio
Barney J. Houston, Chief

We have lost thirty-seven firemen to date. but have not requested deferment.

Bristol, Conn.
George C. Graham, Chief

We have had one man called and none deferred. We haven't tried to have our men deferred.

Rome, Ga.
W. T. McKinney, Chief

Two men have been called in the draft We didn't, however, appeal.

Elyria, Ohio
William Bates, Chief

Only one of our men has been called in the draft. We didn't ask for deferment.

Richmond, Ind.
H. E. Williams, Chief

We have not been able to secure deferment for the two firemen called in the draft.

East St. Louis, Ill.
Gerald M. Fallon, Secretary

Three men have been called for service. None have been deferred. We have not asked for deferment of our firemen.

Evanston, Ill.
A. N. Hofstetter, Fire Marshal

The Evanston Fire Department has not asked for deferment for its members.

Hartford, Conn.
John C. King, Chief

Nine men were called from our department and none deferred. We have not submitted an appeal in any case.

Springfield, Ill.
C. E. Green, Chief

Three were called and none deferred. We did not ask for deferment.

Salem, Ore.
Harry Hutton, Chief

We haven't asked for deferment of any fireman so far. Only one man has been taken into the armed forces and he enlisted.

University City, Mo.
Michael J. Lyons, Chief

No attempt has been made to secure deferment for firemen in this city.

Berwyn, Ill.
James Hrach, Chief

Only one of our men has been called

into the army. We did not try to secure his deferment.

Steubenville, Ohio
Edward J. Green, Chief

Only one man has been called for the draft. We did not appeal his case.

Muskogee, Okla.
G. A. Goodin, Chief

We are not asking for deferment for firemen called in the draft.

Lincoln, Neb.
E. P. Feaster, Chief

We have not asked for any deferments for our firemen as yet.

Dubuque, Ia.
William L. Ryan, Chief

We have not applied for deferment of our men.

New Brunswick, N. J.
Arthur C. Jaques, Chief

To date no deferment aid has been required.

Green Bay, Wis.
Ralph H. Drum, Chief

No deferments have been granted in Green Bay.

Chiefs Buford D. Pinkerton, Bellingham, Wash.; Claude Osborne, Decatur, Ill.; Edward Nelson, Superior, Wis.; Charles Muirhead, Danville, Ill.; August Schmidt, Rock Island, Ill.; Martin J. Hayden, Bridgeport, Conn.; Charles G. Voke, Chelsea, Mass.; Thomas F. Cavanaugh, Waterbury, Conn.; Arthur A. Griswold, East Providence, R. I.; F. W. Kuhn, Pontiac, Mich.; A. L. Loar, Washington, Pa.; James Sweeney, Clifton, N. J.; Leo J. Urbanski, St. Joseph, Mo.; A. J. Cote, Woonsocket, R. I. and Director of Public Safety Francis Wornall, Kansas City, Mo., report that none of the men in their departments have been drafted as yet and thus they have not had occasion to ask for deferment.

Auxiliary Rescues Fireman

There was a feather in the cap of the auxiliary firemen in Washington on June 22, when Milton D. Korman, Assistant Corporation Counsel and an auxiliary fireman, took an active part in the recue of regular fireman James E. White of Truck 3. It was a stubborn two-alarm basement fire in the downtown business section of the Capital.

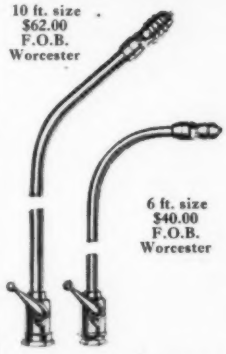
Mr. Korman, who was said to have been exposed to great personal danger in carrying White out of the smoke-filled cellar, seemed to be no worse for the experience. Fireman White was treated by Police Surgeon John Reed at Emergency Hospital. Korman is a well-known Washington buff and a charter member of the Friendship Fire Association. He was on his way to a meeting of the Association when he heard the engines and followed them to the fire.

The building in which the fire occurred houses a branch of the U. S. Labor Department.

ROBERT D. HEINL.

Running *Oil Fire wiped out . . .* *with* ROCKWOOD WaterFOG

30 seconds to wipe up this dangerous running oil fire with WaterFOG



10 ft. size $62.00 F.O.B. Worcester

6 ft. size $40.00 F.O.B. Worcester

Rockwood WaterFOG Applicators with ball-type shut-off. Fit existing hose lines.

Type N-20
¾" size $15.00
1" size $15.00
1½" size $25.00
2½" size $35.00
F. O. B. Worcester

Comes in four sizes to fit existing hose lines. Projects a larger WaterFOG pattern greater distance by a new method.

Rockwood WaterFOG Applicators

You will find many uses for the handy Rockwood WaterFOG Applicators. Use them singly or in multiples of two or three to quickly clean up large area fires of flammable liquids such as fuel oil, kerosene, mineral spirits, incendiary bombs, etc. Protect storage tanks from ignition by radiant heat. WaterFOG will keep exposed materials cooled below their ignition point. Or use the Applicators to fight fires in confined areas such as cellars. Poke the Applicator thru a window or other opening and watch smoke and flame disappear as WaterFOG cleans up. Water FOG works just as effectively on ordinary combustibles.

Rockwood N-20 WaterFOG Nozzles

You can use WaterFOG on large fires impossible to extinguish with the low range of other types of fog or spray nozzles. You have fire fighting distance of 50 feet at 100 lbs. pressure with the 2½ inch size of the Rockwood type N-20. This is possible by the use of an advanced new method developed by the Rockwood research engineers known as the *internal impingement* method of generating and projecting fog. *Low* velocity WaterFOG particles with their greater extinguishing action are projected right into the heart of the fire by means of the proper amount of *high* velocity WaterFOG induced into the low velocity pattern. For use on fires in flammable liquids and oil filled electrical equipment.

Order from your regular fire equipment distributor

ROCKWOOD SPRINKLER CO.

Specialists for 36 years in the Manufacturing and Installation of Fire Protection Equipment

54 HARLOW STREET WORCESTER, MASS.

WE ARE ALL

PLEASED

TO HAVE MET YOU IN THE

CONVENTION ISSUE

Sorry we could not meet face to face. But perhaps, when this war is won, we can all enjoy the pleasure of shaking your hands in person.

K. E. REARICK
Sales Manager

J. C. SCHELLIN
President & Gen'l Mgr.

E. J. HOUSEKEEPER
Factory Manager

These men, and our entire organization, are making an "all-out" effort to build necessary war materials to protect our liberties.

The WOOSTER BRASS CO.

WOOSTER, OHIO

Barton Front Mounted

AMERICAN-MARSH PUMPS

Barton-American Midship

FIRE APPARATUS CENTRIFUGAL PUMPS

PATENTED

• FRONT MOUNTED FOR EASE OF OPERATION

• AUTOMATIC VACUUM PRIMER

• HIGH PRESSURE AT LOW ENGINE SPEED

• BOOSTER TANK OPERATION WITH TRUCK IN MOTION

• *Offered in capacities from 250 to 600 G.P.M.*

•

AMERICAN-MARSH PUMPS, INC.

Battle Creek, Michigan, U. S. A.

Fire Equipment Limited by W. P. B. Order

(*Continued from page* 517)

tioning; generator bodies except bases; shut-off valves except handles; screens and check valves;

(xix) Water spray nozzles with orifice openings in head of ⅛" diameter and smaller, and in scroll for amounts up to and including those attached to ¾" pipe;

(xx) Lightning rods for electrical power stations and industrial plant stacks;

(xxi) Valve seats, discs, stems and guides;

Parts of Alarm Systems Included

(xxii) The following parts of automatic sprinkler systems and automatic fire alarm systems approved by Underwriters' Laboratories, Inc., or Factory Mutual Laboratories;

Actuating units of Aero Alarms, Air Check Housing, Air Tubing A, Angle Pieces, Armature Links, Arm Links, Attaching Collars, Auxiliary Levers, Baffles, Ball, Ball Rivets, Bearing Plates, Bearings, Bell Line Bleeders, Bolts, Bonnets, Brushes, Bucket Wheels, Burrs, Bushings, Caps, Center Pieces, Clappers, Clapper Latches, Clapper Latch Levers, Clapper Stops, Clips, Condenser Parts, Conductors, Connections, Connection Links, Connectors, Contact Holders, Contact Operating Levers, Contact Plungers, Contact Posts, Contacts, Contact Sockets, Couplings, Covers, Cylinder Valve Supports, Deflectors, Diaphrams, Diaphram Plates, Diaphram Plungers, Diaphram Rods, Discs, Disc Clamps, Disc Holders, Disc Rods, Ejector Bodies, Elbows.

Also Enclosing Boxes and Covers, Escapement Levers, holders and ratchets, Frames for Sealed Sprinkler Heads, Fulcrum Levers, Gaskets, Gates, Glands, Gland Clamps, Gland Holders, Glass Holders, Guide Rods, Guide Rod Plates, Hammers, Hooks, Housings, Inlet Restrictions, Inserts, Jumpers, Keys, Knee Pieces, Labels of Inspecting Laboratories, Latches, Latch Rollers, Lever Heads, Lever Rollers, Levers for Sprinkler Heads, Liners, Links, Lock Bars, Lock Spacers, Lower Shells.

Also Manifold Blocks, Manual Pull Cans, Manual Pull Levers, Mercoid Plates, Mercury Check Header Bars and Manifolds, Monitor Valve Holders, Monitor Valve Seats, Nipples, Nozzle Strainers, Nuts, Operating Levers, Pawls, Pilots, Pilot Valve Parts, Pin Holders, Pinions, Pins, Plates, Plugs, Plungers, Plunger Discs, Pressure Regulator Parts, Pull Cables, Pull Rods, Pump Valve Levers, Pump Valve Seats, Quadrants, Reduction Levers, Release Frames, Releasing Levers, Relief Valve Housing, Reseating Latches, Reset Buttons, Restrictions, Reset Lugs, Restriction Tubes, Retaining Plates, Rocker Arms, Roll Rams, Rollers, Screens, Screws, Sealing Eyes, Sealing Wires, Seat Holders, Seats, Shafts, Sight Slides, Siren Valve Bodies, Siren Valve Seats, Snap Action Frames, Snap Action Rolls, Socket Pieces, Spacers, Spring Guides.

Also Spring Lugs, Spring Retainers, Springs, Stems, Studs, Supports, Switches, Switch Carriages, Switch Holders, Terminals, Test Connectors, Test Fingers, Test Tubing Connections, Tie Rods, Tongue Flanges, Tongue Latches, Tongue Plates, Tube Solder Plates, Tubing and Fittings, Upper

Shells, Valve Holders, Valve Guides, Valve Rods. Valves, not over 2 inches, Valve Stems, Velocity Bodies, Velocity Check Plugs, Velocity Clappers, Vent Adaptors, Vent Bodies, Vent Elbows, Vent Ties, Washers, Wedges, Weight Bottom Plates, Weight Guide Rods, Weight Guides, Weight Latches, Weight Pawls, Weight Stops, Wire and Cable, Yokes, Yokes Collars.

Lead for Underground Pipe Connections

(6) Lead:
(i) As a component of fusible link alloy or solder;
(ii) In underground pipe connections to the extent essential to efficient functioning of such connections, and in hose connections for hydrants;
(iii) In copper base alloys, the use of which is permitted by paragraph (5) hereof;
(iv) As required for extinguisher nozzles;
(7) Mercury, as required in check valves for automatic alarm systems;
(8) Nickel, as a component of stainless steel the use of which is permitted by subparagraph (10) hereof:
(9) Tin:
(i) As a component of fusible link alloy;
(ii) In copper base alloys the use of which is permitted by paragraph (5) hereof, but only where no tin-free alloy can be used and only to the extent essential to efficient functioning;
(iii) In condenser parts for automatic fire alarms;
(iv) Up to 30 percent by weight, in metals used in the coating of copper or of copper alloys for anti-corrosion protection;
(v) Up to 5 percent by weight in metal for coating steel shells;
(vi) In solder up to 30 percent by weight; or up to 50 percent upon specific authorization by the Director of Industry Operations.
(10) Stainless steel:
(i) In hinge pins; or
(ii) In the construction of mercury check valves.
(11) Zinc:
(i) In automatic fire alarm systems, to the extent essential to efficient functioning;
(ii) In copper alloys, the use of which is permitted by paragraph (5) hereof;
(iii) In die cast parts;
(iv) As protection of iron or steel parts against corrosion; or
(v) As sheet to the extent that corrosion-resistant metal is essential to efficient functioning.
(12) Asbestos in gaskets on fixed foam applicator pipes and hydrants;
(13) Crude or reclaimed rubber for diaphragms or gaskets, and reclaimed rubber for hose for fire extinguishers;
(14) Synthetic rubber other than neoprene, to the extent essential to efficient functioning.
[F. R. Doc. 42-6617; Filed July 11, 1942; 12:00 m.]

Campbell Elected Secretary-Treasurer of Dayton Control

E. F. Campbell, Controller of the Fyr-Fyter Company, has been re-elected Secretary-Treasurer of the Dayton Control of the Controllers Institute of America.

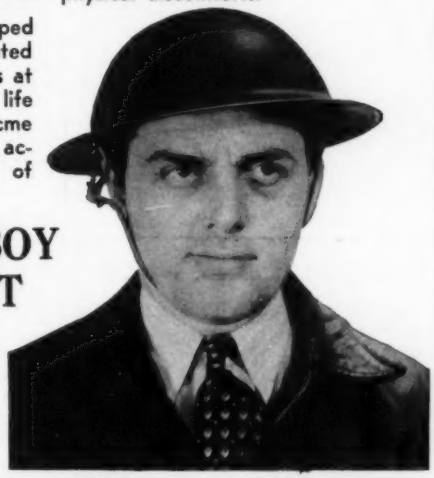
MANY FIRE FIGHTERS NOW USING ACME GAS MASKS

Modern Acme Full Vision Gas Masks are meeting the requirements of Fire Fighters every day. These Masks enable the firemen to enter smoke-filled areas and protects them against smoke suffocation. In addition they protect against Carbon Monoxide, Toxic Smokes, Illuminating Gas, all individual or combination of Gases.

The exclusive wide, flat Safety Glass Lenses in Acme Masks provide the Firemen with non-distorted vision to either side, and enables them to move about with maximum freedom.

Only a light tension is required to fit Acme Masks to the face, thereby eliminating headaches and other physical discomforts.

Acme Gas Masks are equipped with the exclusive Acme patented Automatic Timer which reveals at a glance how much service life remains in the canister. The Acme Timer NEVER FAILS as it is actuated only by the process of breathing.



ACME DOUGHBOY TYPE HELMET

Shown on the right is the Acme Doughboy type Helmet which is needed by firemen during the present emergency. It is made of a highgrade Alloy Steel, well padded inside, and provides the ultimate in head protection against falling objects.

Write for Prices and Literature TODAY

ACME PROTECTION EQUIPMENT COMPANY, INC.
Manufacturers
3616 LIBERTY AVENUE Cable Address: ACMEPROCO PITTSBURGH, PA. U.S.A.

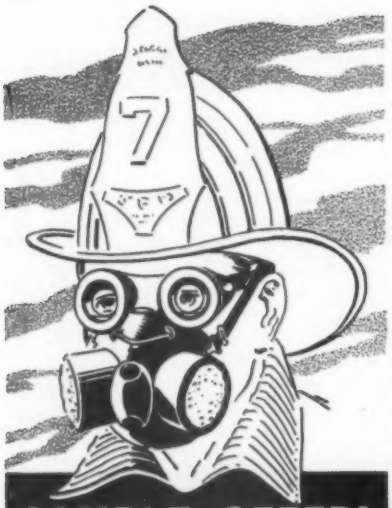
BUELL WAV-A-WAY SIGNAL LIGHT

"Clears the Way" for Fire and Police Depts., Ambulances and all Emergency Equipment.

Powerful, concentrated beam swings from side to side to attract and compel traffic attention. Gets the right-of-way even in daylight. Heavy steel shell enclosing all operating mechanism in a stationary, dustproof, waterproof unit. Has no exposed moving parts to be tampered with. Long-life, slow-speed motor with self-oiling bearings. Supplied with red or clear lens.

Write for prices and descriptive folder.

BUELL MANUFACTURING CO.
2992 COTTAGE GROVE AVE., CHICAGO, ILL., U.S.A.



SAMPLE OFFER!
New DUPOR No. 20, Double Sponge Smoke Mask ($24 doz.)
and famous
"Nod & Shake", Fog-Proof
RUBBER GOGGLES ($18 doz.)
1 Sample of Each Sent
H. S. COVER
68 CHIPPEWA ST.
SOUTH BEND, INDIANA
$3.50 POST PAID

British Air Raids Develop New Kinks

(*Continued from page* 515)

is sometimes used, running immediately underneath the roof of a building, over window spaces, etc. and spaced at intervals so that a falling incendiary bomb will break them. The low melting point of this type of wire means immediate decomposition when the fire bomb touches it, sounding the alarm by a thermostatic arrangement. The exact location of a fire in a huge factory can thus be indicated on a board like a bell indicator in the watchman's or warden's post, and it may also be linked with the ordinary peacetime fire alarm bell. A whole area of buildings can thus be covered for one post of watchers.

There is a one-man fire-fighter invention in which a totally-enclosed 2½ gallons water tank rests on the man's shoulders and from it leads a tube to a double or single acting pump with dual purpose nozzle for spray or jet effect, and there is also a face shield to protect the operator and his eyes from smoke and flying particles. He can thus carry his equipment with both hands free for climbing ladders or using sandbags on incendiaries. Sandbags that are circular in design are much easier to place on burning bombs. Sandbags soon rot in store, but a new preservative of copper sulphate and ordinary washing soda has been found to increase their life at least eight times where they are stored for fire use.

QUAKER
FIRE HOSE
CHEMICAL
•
FORESTRY
•
SUCTION
HOSE

QUAKER QUALITY
SINCE 1885
QUAKER RUBBER CORPORATION
Main Office & Factory: PHILADELPHIA
NEW YORK • CHICAGO • HOUSTON
Western Territory
QUAKER PACIFIC RUBBER CO.
SAN FRANCISCO • LOS ANGELES

Indiana Chiefs to Hold Defense Conference

The Indiana Fire Chiefs Association will hold a State Defense Conference in the City of Evansville, Ind., on September 23-25. Invitations are being extended to every fire chief and fire official in Indiana, as well as of the larger cities in Michigan, Ohio, Kentucky and Illinois. An invitation is also being extended to chiefs of plant protection, industrial fire chiefs and safety directors of Indiana's industries which are engaged in war production, in an effort to more closely coordinate the protection of these essential and vital industries.

Frank L. Orr, Business Manager of the Indiana Fire Chiefs Association, is cooperating with Clem Smith, State Fire Marshal, in arranging an intensely interesting and educational program.

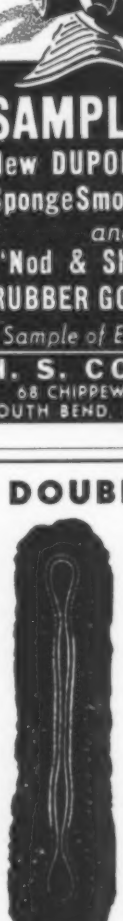
June Fire Loss

Fire losses in the United States during June were $22,410,000, according to the estimate given out by the National Board of Fire Underwriters. These estimated losses, under fire insurance policies, are on an incurred basis. including an allowance for unreported and uninsured losses.

The losses in June were 10 per cent less than those in the same month a year ago, when they totaled $24,943,000. This is the fourth successive month this year in which the fire losses have been sharply lower than in the corresponding month of last year.

The June losses of $22,410,000 compare with the May figure of $23,233,000, a drop of $823,000, or three percent.

DOUBLE SERVICE
with
BI-LATERAL



This installation shows the position of the rubber lining in BI-LATERAL FIRE HOSE when held in a flattened position between calls into service. This is why we can save a city one replacement, because this hose will give double service of any hose constructed under the old method.

Also we can load 25% more on the apparatus bed actually making an $8,000 truck loaded with Bi-Lateral construction, cheaper than a $7,000 one loaded with other construction.

Here's the new DROP-FORGED rocker lug coupling (not cast bronze) with the swivel protecting feature.

BI-LATERAL
FIRE HOSE CO.
20 No. Wacker Drive Chicago, Ill.

ELK HART IND.

A PARTIAL LIST OF
ELKHART PRODUCTS

Shut-Off Nozzles
Controlling Nozzles
Turret Pipes
Fire Department Extinguishers
Extinguisher Holders
Fire Truck Body Fittings
Hose House Equipment
All Types of Hose Couplings
Sliding Poles, Railings and Canopies
Fog Nozzles
Hose Test Pumps
Threading Tools
Coupling Expanders
Pump and Hydrant Valves
Hose Racks and Cabinets
Siamese Connections
Underwriters' Industrial Extinguishers

38 years' service in the fire field
•
Prompt service - Quality products
•
Send for illustrated folder on the New Elkhart Mystery Nozzle.

ELKHART
BRASS MFG. CO.
ELKHART, INDIANA

Manufacturers' Announcements

New Box for Fire Extinguishers

Erie Supply and Equipment Company, Sandusky, Ohio, have designed a Tam-Pruf box for the protection of fire extinguishers. This box is all metal, with glass windows and padlocked to prevent all tampering. It is said to keep the extinguisher in good condition and protect it from weather and atmospheric conditions.

New Extinguisher for Magnesium Fires

The Philip Carey Manufacturing Company, Lockland, Cincinnati, Ohio, announces the development of a product for reducing the losses incident to magnesium fires. The new product is called Carey MX Granules.

Tests are said to show that, when spread over the fire, these granules soften, and seal the burning magnesium with an air-tight blanket, cutting off the oxygen supply and quickly extinguishing the fire. An added advantage claimed is the large percentage of metal recovered after the fire is extinguished. The same principle and methods apply also, to extinguishing magnesium incendiary bombs.

Due to the increased use of magnesium, especially in plants producing military material, magnesium fires and explosions have become relatively frequent. Owing to the high temperature at which magnesium burns, around 3000 degrees F., such fires are extremely hazardous, as well as entailing serious losses of the metal itself.

The Underwriters' Laboratories have also conducted tests.

Four Injured in Soap Plant Fire

Four men, three of them firemen, were painfully burned in a $300,000 fire at the four-building plant of the Par Soap Company in Oakland, Calif., early on the morning of May 7.

Six alarms were sounded from Box 2625 at 86th Avenue and San Leandro Boulevard, bringing in 11 engine companies, four trucks, several high pressure hose companies and four chiefs.

The factory, consisting of four buildings, all located in the space of one square block at 86th and San Leandro Boulevard, was totally destroyed by the fire, which was preceded by an explosion.

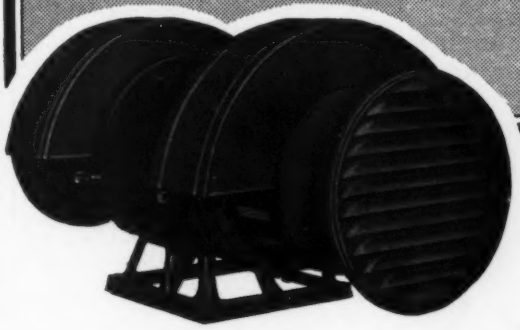
An employe, Thomas Shearer, was blown across a room in one of the four structures when he tried to light a furnace. A pocket of gas had accumulated and exploded in his attempt to ignite the furnace.

Despite painful burns about the hands and face, he managed to crawl through the flaming room to the street and then stumbled to the fire box to sound the alarm.

The first alarm was sounded at 11:25 p. m. It was followed by a third alarm at 11:36 and a sixth alarm at 11:45. Chief William G. Lutkey was in personal charge at the blaze. Three firemen off Engine 4 were injured when lye, used in making the soap, swirled around in the water in the plant and burned their ankles and feet.

BOB GREENOCK.

BE PREPARED NOW for LATER!



STERLING MODEL "M" GENERAL ALARM SIREN

You Can Depend On It *ALWAYS*

These are days of positive action. Now is the time to prepare for future eventualities, whether they be "Fire Alarms" or "Air Raids." Give your community the best possible protection you can. . . . Give it "Sterling Protection." Sterling Sirens are always ready for emergencies day or night. In the regulated, shrill vibrations of the STERLING SIREN ALARM you have the answer to both the fire alarm and air raid housed in one piece of equipment.

Oldest and Largest Exclusive Makers of Siren Signals

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

Specify HALE

FIRE PUMPS HALE CONSHOHOCKEN

• • • • and your complete pumping unit or pumping engine will be thoroughly engineered for a high standard of performance and reliability.

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Write today for the Catalog and Folders on the complete line of Hale Pumps.

HALE FIRE PUMP COMPANY
CONSHOHOCKEN, PA.

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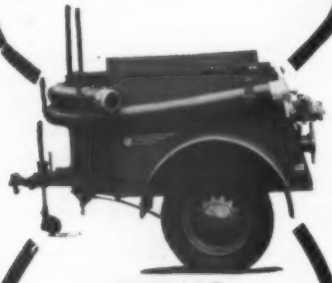
EFFECTIVE



BUFFALO
TRAILER PUMPER

Regular fire apparatus cannot cope with "multiple-fire" hazards of an incendiary bomb attack! Buffalo Trailer Pumpers are *proven* auxiliary equipment—easily transported—dependable. This compact unit is designed for coupling to car or truck. Meets Underwriters requirements with capacity of 500 and 600 G.P.M. Has space for 400 feet of 2½" hose.

Skid mounted pumping units of same capacity are also available. Details on request.

Buffalo Fire Appliance Corp.
52 Central Avenue Buffalo, N. Y.

WENTWORTH
FIREMAN'S UNIFORM CAPS
UNION MADE PROMPT DELIVERY

No. 342

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available by the Best Skilled Union Craftsmen. Our 46 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.

No. 441

Wentworth Fireman Caps are made in all the New and Standard styles. Bell Top, 8-Point, Military, etc. Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
578b Washington St., Boston, Mass.

Manufacturers
Fireman Cap Specialists for Over 45 Years

The Watch Desk

(*Continued from page 525*)

working and separated the goat from the smoke odors, and got his "rush order" through to the F.D., there was more trouble. On the fire scene every time the blueshirts stooped to pick up a tool or untangle hose the goats playfully (?) butted 'em for a loop the loop. After the fire—which consumed the house—we understand most of the Brothers "ate off the mantel" for some time!

* * *

One for Ripley

The month's "believe it or not" comes from Earle Robinson and recounts the mysterious doings to Lowell Sayles' automobile.

Lowell's car stood in a double garage on his farm near Perry (Ia.). Alongside stood a trailer. One morning he found his car swept by a fire so hot it melted metal parts yet—

1. The gas remained unburned in the tank.
2. The garage was not damaged at all.
3. The nearby trailer suffered only smoke damage.

* * *

Co't's Adjourned!

Down in Salisbury (Md.), Peoples Court Judge E. Sheldon Jones, who is also a local Editor, let his mind wander from his court proceedings when the local fire alarm rang. He glanced out the window then hurriedly adjourned court as the fire engine roared into sight.

The fire was right across the way, in his newspaper office!

* * *

Another Ripley?

Contrib' Johnny Weisberger bids for the "nifty" of the month with an item from Spencer (Ia.) which tells about a fire caused by pop corn. Yeah—the popcorn "popped" so fast and so furiously right in the field where it was being burned off—and got the blame for spreading the fire with result that a barn on the F. L. Thompson farm was destroyed. Now you tell one.

Chief Krenz Rounds Out Fifty Years

Chief Albert Krenz of the Clinton, Ia., Fire Department, has completed a half century of service. The Chief is also the oldest fireman from the point of service of any department member in the state.

Chief Krenz joined the department on July 12, 1892. The horses were the motive power of the old steam engines until 1914, when the Clinton Department got its first motor truck, which consisted of a six-cylinder tractor to pull the hook and ladder.

Chief Krenz has seen the Clinton Fire Department grow from a "one horse" outfit to one of the most modernly equipped in the country. Few cities the size of Clinton can boast the equipment the department has at Central Station, in fact many cities twice the size of Clinton do not have aerial ladder trucks or pumpers with enclosed cabs. Chief Krenz has always favored an up-to-date department and under his regime fire losses have been kept at a minimum.

★

Midwestern Coats Still Available—

★ The Government still permits us to provide protective clothing to municipal fire departments, particularly in defense areas, but, of course, the needs of the armed forces come first. An inquiry will bring prompt information as to fabrics available as well as prices and shipping information. Our production has been stepped up and you can still look to Midwestern as the most reliable source for firemen's protective clothing. Model 301 illustrated. Many extra features. Write for catalog.

Midwestern Mfg. Co.
Mackinaw, Illinois

No time now to get dry battery lights

USE SUPER-POWERFUL, RECHARGEABLE
MASTER-LIGHTS

Only $30-$35-$40-$45

70 MASTER-LIGHTS
ONE FOR EVERY NEED

"MASTER★LIGHT★MAKERS"
CARPENTER MFG. CO.
200 Sidney St., Cambridge, Mass.

IMPROVED INCENDIARY BOMB PUMP

Designed for extra sturdiness and maximum efficiency

The two cylinders provide constant quick pressure on both the up and down stroke. All working parts accurately machined, including the two-way slide type nozzle, for mist spray or straight spray.

Other type bomb pumps of larger size with containers complete also manufactured, as well as fire hose nozzles, wheels, plugs, caps, etc.

The CAMPBELL-HAUSFELD COMPANY
402 Railroad Avenue, Harrison, Ohio

Precision Engineering—

Modern, dependable fire-fighting apparatus is needed to conduct and combat modern warfare. Ward LaFrance equipment is precision engineered to assure speed with safety, and long, economical service. Write today for complete information.

WARD LaFRANCE TRUCK CORP.
ELMIRA HEIGHTS NEW YORK

"Fire Apparatus of Quality"
NEW YORK BRANCH
139th St. and Southern Blvd.
New York City

Daniel A. Woodhouse Dies

Daniel Arthur Woodhouse, founder and former President of the Woodhouse Manufacturing Company, dealers in fire fighting equipment, New York, N. Y., died on August 6, at his home, 378 Warwick Avenue, Elizabeth, N. J.

Daniel A. Woodhouse

Mr. Woodhouse, who was in his eighty-third year, founded the Woodhouse Company in 1885 and remained its president until his retirement three years ago.

Well known in the fire field, Mr. Woodhouse sold New York City its first piece of motor fire apparatus back in 1906.

Mr. Woodhouse was also active in the Blizzard Men of 1888, an organization formed to commemorate New York's worst recorded snowstorm. He served as Secretary, Treasurer, President and Director of that organization.

Surviving are his wife, Mrs. Maude Henderson Woodhouse; a son, Daniel Woodhouse, and a daughter, Miss Marion Woodhouse.

The Round Table

(*Continued from page* 527)

Truck—Fords and
Light ..... 1.00 per hour
Heavy Duty Truck... 2.50 per hour
Passenger Car ..... 0.05 per mile"

No charge is made for the use of fire equipment and personnel in the case of communities maintaining paid fire departments which have reciprocal agreements for such service with the City of Minneapolis.

Men fighting fires out of the city are considered to be under workmen's compensation protection the same as though they were working in the city.

John M. Slocum, Chief, Huntington Park, Cal.: We do not make any charge for out-of-town calls.

The State of California has a bill whereby one department can pass from one city to another and still be protected by state compensation. The City of Huntington Park has also passed an ordinance allowing our department to give assistance to out-of-town departments and still be protected.

State compensation pays $5,000.00 for accidental death. It also takes care of any injuries, pneumonia, heart disease and hernia.

H. P. Constantine, Chief, Bangor, Me.: We charge $25.00 per hour per pumper and $1.00 per hour man service.

Our men are covered by our regular city compensation insurance which

THE "ALL-OUT" EXTINGUISHER
has accomplished the following feats:

1. **Extinguished a 12'x12' oil pit fire. (15 seconds)**
2. **Covered above pit fire with film preventing reflash.**
3. **Extinguished running gasoline fire more than 6 times. (same extinguisher)**
4. **Extinguished calcium carbide (acetylene gas) pit 18"x18"x18". (10 seconds)**
5. **Extinguished magnesium bomb assisted by magna hood.**
6. **Extinguished magnesium scrap assisted by magna hood.**

In addition, the "All-Out" Extinguisher is a non-conductor of electricity and a non-abrasive. (Harmless to machinery.)

Has a range of more than 25 feet and contains no dangerous gases.

Can your present extinguisher duplicate the above feats? If not, why not investigate "All-Out"?

Distributors Wanted
Immediate Delivery

NATIONAL POWDER EXTINGUISHER CORPORATION
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"DANDRY" QUALITY SALVAGE COVERS

THEY ARE *made better* . . . they *last longer* . . . they give greater *service per dollar*. That's why "Dandry" Salvage Covers are specified by leading Fire Departments and Defense Councils all over America! Large demand and efficient production methods make possible real economies for you! Send for descriptive folder FEI today!

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THE New WHEAT
Rechargeable Spotlight
MODEL 158
2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION

Critical Materials Reduced to a Minimum to Insure Availability
FEATURES
★ Positive "non-spill" Construction
★ Less expensive Operation than dry cells
★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
★ Simple to Charge and Water No need to take Lamp apart
★ Light can be Focused and Directed as Desired
WRITE FOR COMPLETE DETAILS
KOEHLER MANUFACTURING COMPANY, INC.
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"ALL AMERICAN CHOICE"
INVINCIBLE NOZZLES
PREPARE — PROTECT
Portable equipment is the watchword of today.
Buy—
INVINCIBLE NOZZLES
and enjoy the benefits derived by experience of the pioneers in the nozzle field.

Fig. 403
F. H. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
BOSTON, MASS.
1837 -- 1941

is regulated under the state insurance laws.

Members of the Bangor Fire Department injured while on duty receive their full pay.

We presume we would have to pay the hospital costs, etc., if there were no compensation insurance covering the members. That is, where there is no written agreement with any of the very few towns that we answer calls for. The Fire Department was placed under compensation insurance a year ago last April. Previous to this we had no insurance and paid our own bills. We do not remember any of our members being seriously injured at an out-of-town fire.

Cities should have a written agreement with outside towns to the effect that the towns should stand the costs of injuries to members of city fire departments operating on fires in the towns.

Charles Kuhl, Chief, Sioux City, Ia.: We do not make out-of-town runs, except where a town is on fire and they have plenty of water. We also answer calls from the city airport and bomber base which is seven miles outside the city limits.

There is no insurance provided, but I have had an ordinance passed which protects the men responding to calls at the airport. The city would pay doctor and hospital costs if the men were injured in performance of their duties.

Charles L. Slade, Des Moines, Ia.: We make no out-of-town runs except where we have contracts with corporations or firms. The only ones contracted with at the present time are the army post and ordinance plant, the county home, two schools and the City of West Des Moines, which is really a suburb of Des Moines. We make no charge for these runs.

Men injured while on these runs receive full pay for six months with their pension rights protected.

I do not aprove of out-of-town runs and do what I can to prevent the Council from contracting to furnish this service.

Olander Lind, Chief, Kansas City, Kan.: We have discontinued making out-of-town runs because of the disruption of running the schedules and the fact that our city is rapidly becoming identified with the protection of important materials for the war effort.

We have immediately adjacent to our city an industrial district that is now occupied 100 per cent by firms engaged in war contracts. This district, operating under the authority of a legislative act, has entered into a contract with our city and the fire department for fire protection. We are giving this district the same coverage as if they were in the vity proper.

The act empowering townships and districts to enter into a contract with a municipality for the protection automatically gives the men of my department full rights as to civil service, pensions, and injuries.

I feel that now is the time that we as chiefs of the fire departments in cities contributing to our war efforts should give deep consideration to keeping our department in service as much as possible for response to fires at our industrial plants, particularly those holding war contracts. Now is the time when we must double our efforts and in-

HARRINGTON

FIRE ALARM SYSTEMS
Recognized as standard in their high quality and dependability of service since 1921. The cover of the 6" gong illustrated can be removed for inspection without disturbing the mechanism. These gongs are strongly built and light in weight.
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HARRINGTON SIGNAL CO.
Moline Illinois

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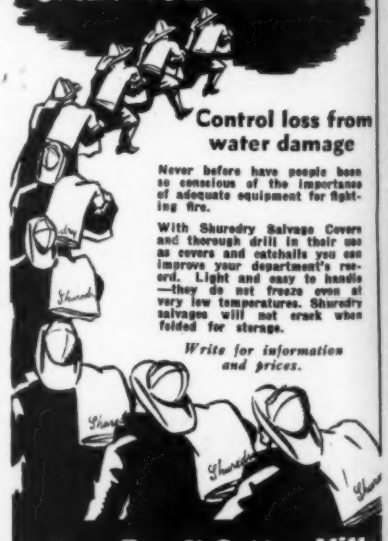
Control loss from water damage
Never before have people been so conscious of the importance of adequate equipment for fighting fire.
With Shuredry Salvage Covers and thorough drill in their use as covers and catchalls you can improve your department's record. Light and easy to handle—they do not freeze even at very low temperatures. Shuredry salvages will not crack when folded for storage.
Write for information and prices.
Fulton Bag & Cotton Mills
Manufacturers since 1870
Atlanta St. Louis Dallas Minneapolis
New York New Orleans Kansas City, Kan.

A BADGE
to be proud of
NOW
more than ever!
BEFORE!

Now — because of the government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium — we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver and 14 karat gold.

Today — for just a little more, you get a sterling silver Braxmar Badge — without doubt the best badge you can buy anywhere.

The blue covered catalog is the latest published but write for our new price list. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

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BRAXMAR BADGES

Standard for over 60 years

Be Prepared NOW *for* LATER

These are days of action. Now is the time to prepare for future emergencies. Now is the time to check your public buildings and institutions, as well as your defense plants and housing projects.

Don't wait for an emergency to show you where you need fire escapes. If you have any buildings in your community that lack the proper facilities for escaping fire, then you can do no greater public service than to recommend the *Potter Slide Fire Escapes.* These safe, easy-to-use and efficient fire escapes have been saving human life for many years—over 6,000 of them are in actual service. Hundreds of lives are saved by them annually.

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The recommendations of our experienced engineers are yours for the asking, without any obligation to you.

Write for detailed literature.

Potter Mfg Corp
SLIDE FIRE ESCAPES

James A. Flynn, Pres.
6160 No. California Ave.
CHICAGO ILLINOIS

spections so as to remove all fire hazards. I also believe that it is advisable to have complete inspections so that the men responding to fires in such industries will be familiar with conditions that otherwise would be unknown to them.

R. A. Bogan, Chief, Baton Rouge, La.: The Parish in which the City of Baton Rouge is located appropriates $8,200.00 a year for outside protection.

All firemen were insured for $2,000, the city paying all premiums.

A. Brown, Chief, Birmingham, Ala.: We make no charge for out-of-town runs. Runs are made at the discretion of the Chief and are governed by weather and fire conditions. In cold dry spells with frequent fires, no runs are made. I feel that, if we charged for these runs, we would be obligated to make them under any condition.

The City Attorney has ruled that members hurt in fighting out-of-town fires are entitled to all benefits allowed. A fireman injured in performance of his duty receives full pay for six months. If he is still temporarily disabled, he receives a pension of two-thirds of his salary for one year. After that the regular pension of sixty-five per cent of his salary takes effect. When physically fit again, he can return to work.

The City Attorney has also ruled that the fire department has the same right of way in answering out-of-town calls as city calls. Whether this would stand up in court is questionable.

M. J. Brun, Chief, Fort Smith, Ark.: The city has an ordinance that prohibits fire apparatus from going beyond the city limits.

R. Wright, Chief, East St. Louis, Ill.: We charge $50.00 for each alarm to which the fire department responds.

The city takes care of the men who are injured from the money received from the alarms.

J. E. Dellinger, Chief, Macon, Ga.: We do charge for runs outside of the city. Property owners take out insurance certificates which pay the city $100.00 if the fire department is called out and we respond. Each property holder pays the city a $4.00 fee per year and the insurance company charges $1.00 or $1.50 for the insurance certificate.

The city takes care of men injured while on duty outside the city in the same way that it does if the men are injured within the city limits.

Leo J. Urbanski, Chief, St. Joseph, Mo.: We do not charge for runs made outside the city. The City of St. Joseph pays all hospital costs, doctor's bills, etc., if the men are injured while on these runs.

E. P. Feaster, Chief, Lincoln, Neb.: We do not charge for runs made outside of the city. The City of Lincoln provides compensation insurance and hospital costs. Men injured on duty receive $15.00 per week.

F. L. Campion, Chief, Fargo, N. D.: We do not charge for out-of-town calls. Extra-territorial insurance covers all men in the fire department, in the amount of two-thirds of his salary. The North Dakota Compensation Bureau pays hospital costs, etc.

G. A. Goodin, Chief, Muskogee, Okla.: We do not charge for out-of-town runs. The city carries insurance of $1,000.00 on each man. If the firemen are injured, hospital costs, etc., are paid out of the pension fund.

SEALAND TRAILER PUMPS

These mobile trailers made in 150, 250 and 500 gallon units are powered with gasoline motors, carry 500 ft. of double jacket Fire hose, and may be equipped with 100 gallon booster tanks. Skid mounted units can be furnished. Pumps can be purchased without trailers.

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Centrifugal Pumps—Fire Alarm Systems—Modern Fire Apparatus
SAUGATUCK, CONN.

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ONE PIECE
ONE MOVE
and Your Face Is
COMPLETELY COVERED!

Cases No. 605

HEALTHGUARD MASK

★ You can see by the above illustration how snugly the Healthguard Mask fits your face.

This mask may be worn for protection from wood smoke and numerous acid fumes and gases, by simply changing from one cartridge to another. Not a single dissatisfied user among hundreds now wearing this Healthguard Mask. Comes packed in a neat metal carrying case.

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2309 Warren Boulevard, Chicago, Ill.

THE RESULT required of a fire pump is perfect performance . . . absolute, unfailing delivery of water as wanted. Your safety depends upon that performance . . . WATEROUS' experienced mechanics realize their responsibility in building fire pumps. Their skilled workmanship is a primary factor behind the built in dependability of WATEROUS Fire Pumps. Write for descriptive literature.

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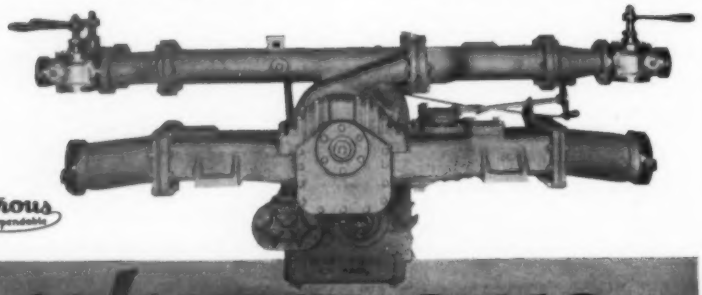

WATEROUS
CENTRIFUGAL-ROTARY
FIRE PUMPS

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AUGUST, 1942

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A 254 page book, 185 illustrations, flexible Fabrikoid binding, by Fred Shepperd, Editorial Director of FIRE ENGINEERING.

Brings thoroughly up-to-date the subject of hydraulics as it pertains to every phase of fire-fighting—in simpler, more understandable and more complete form than ever. Not only that, it embraces, as well, many important new angles that have never before been covered anywhere. There are several brand new formulas, originated by Mr. Shepperd, and even old ones have been simplified or revised for greater accuracy.

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By Fred Shepperd. Published in response to numerous requests from fire department officers and men working for advancement, this new book embraces the famous "Promotional Study Course" which ran serially in FIRE ENGINEERING during the past few years and proved to be so tremendously popular. Covering in chapter lessons most of the important phases of fire protection promotional study—mainly in questions and answers form—all of it is in the concise style generally used and preferred by civil service examiners.

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In planning a new fire station, you can save time and do a better job if you have photographs and floor plans before you that show how such buildings embody the newer types of design and construction.

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8-42

The FOGNOZL APPLICATOR ILLUSTRATED BELOW
Manufactured by FOG NOZZLE COMPANY

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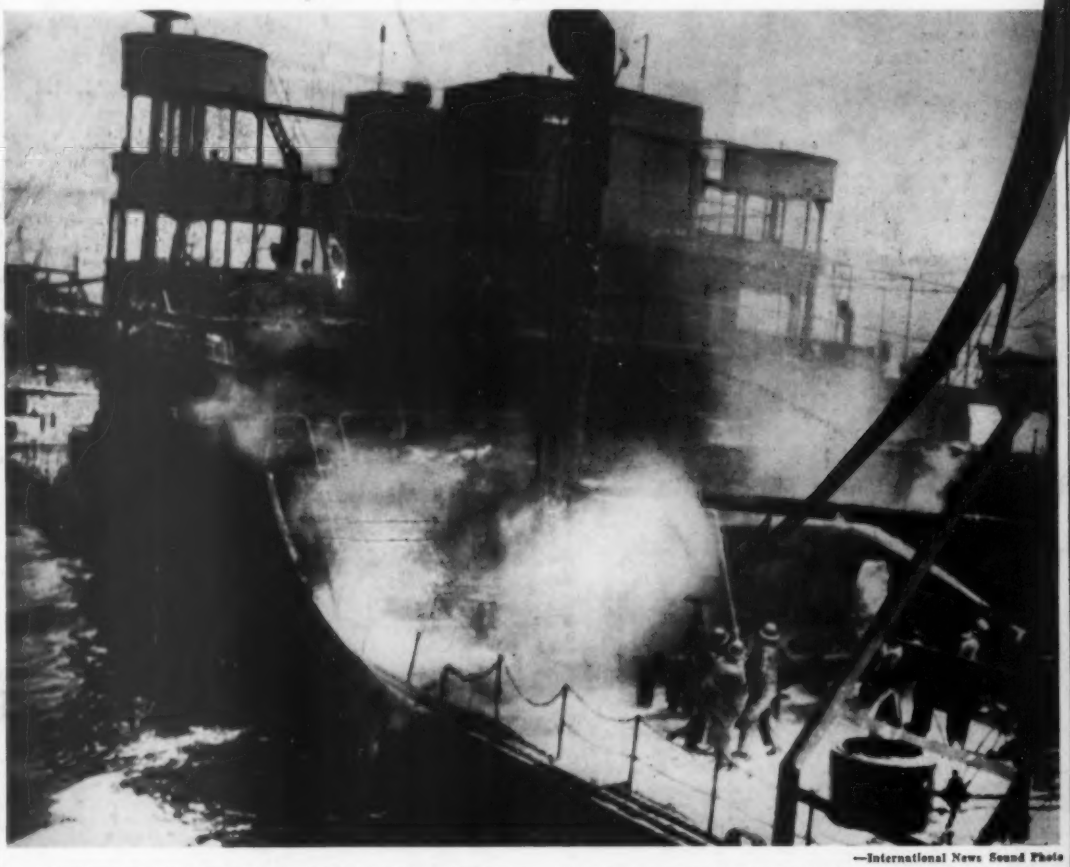
Navy's Fire Fighters in Action



—International News Sound Photo

Members of the Navy Fire Fighters School attack a blaze aboard an American tanker in their first opportunity to practice at sea what they learned at the Navy's new school. The fire broke out during salvage operations after the vessel had struck a mine off the Atlantic coast, near Virginia.

Ohio, and S. D. McGrary, V—

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